# THE PROSOBRANCHIA OF THE SIBOGA EXPEDITION

BY

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PART V

### TOXOGLOSSA

With 6 plates and 1 textfigure



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#### PART V

## TOXOGLOSSA

#### WITH A SUPPLEMENT

The very interesting section of the Toxoglossa contains 228 species, of which no less than 65 appear to be new to science, moreover to this part a small supplement to preceding parts has been added, containing 3 new species.

The family of the *Pleurotomidae*, with 127 enumerated species and a few varieties, has given me much trouble, but has not given me full satisfaction, the systematic position of many species remaining still more or less doubtful and the classification of this family much wants a revision. I have often followed the arrangement of the late Prof. BOETTGER for the species from the Philippines. The relatively small number of specimens dredged with the soft parts, prevented me from examining the radular teeth, in most cases where they might have given some light. Under these circumstances, I am very grateful to those persons who have assisted me in the identification of critical specimens. Mr. E. A. SMITH I.S.O. often compared them with the treasures of the British Museum, Mr. J. COSMO MELVILL has given me his advice and in some cases specimens for comparison, Mr. J. R. LE BOCKTON TOMLIN likewise assisted me by identification or loan of specimens, Mr. J. VERWIJNEN has again much obliged me by the loan of books from the rich library of Teyler's Museum, and other persons amongst which I wish to name Dr. R. HORST, have assisted me in several ways. I beg them all to accept my kind thanks.

In two cases I was compelled to erect new genera of *Pleurotomidae*, as it was impossible to locate the species in the existing ones, though I was not at all eager to enlarge the number of groups, as long as no revision of the whole family has been undertaken by some person who is in particularly favorable conditions, to fulfil this much needed but very troublesome task.

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SIBOGA-EXPEDITIE XLIX<sup>1</sup>e.

Section ToxogLossA Troschel.

#### Fam. TEREBRIDAE.

#### Terebra Adanson.

#### 1. Terebra subulata Linné.

LINNE. Syst. Nat. Ed. XII, p. 1205. RUMPH. Amb. Rariteitkamer, p. 100, Pl. 30, fig. B. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 10, Pl. 4, fig. 6. KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 23, Pl. 6, fig. 1. SOWERBY. Thes. Conchyl. Vol. I, p. 151, Pl. 41, fig. 16; Pl. 42, fig. 38, 39. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 22. TRYON. Man of Conch. Vol. VII, p. 10, Pl. 1, fig. 3.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 1 Spec. Stat. 279. Roma. Reef. 1 Spec.

#### 2. Terebra muscaria Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. X, p. 241. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 9, Pl. 3, fig. 4, 4a. KÜSTER. Martini-Chemn. Conch. Cab. Ed. II. Vol. V, Terebra, p. 4, Pl. 2, fig. 8. SOWERBY. Thes. Conchyl. Vol. I, p. 154, Pl. 41, fig. 17, 20; Pl. 42, fig. 41. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 9. TRYON. Man. of Conch. Vol. VII, p. 9, Pl. 1, fig. 12.

Stat. 91. Muaras reef, East coast of Borneo. Up to 54 M. Hard coral, sand. 1 Spec. Stat. 240. Banda. 9—45 M. Black sand, coral, Lithothamnion. 1 Spec. Stat. ? 1 Spec.

The specimen from Stat. 91 is very young (about 15 Mill.) and bleached, consequently scarcely recognizable.

#### 3. Terebra dimidiata Linné,

LINNE. Syst. Nat. Ed. X, p. 742, Nº 420. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 6, Pl. 2, fig. 2. KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 7, Pl. 1, fig. 8, Pl. 4, fig. 2, 3. SOWERBY. Thes. Conchyl. Vol. I, p. 153, Pl. 41, fig. 7, 8. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 27. TRYON. Man. of Conch. Vol. VII, p. 9, Pl. 1, fig. 13. Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 2 Spec.
Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 2 Spec.
Stat. ? 2 Spec.

4. Terebra oculata Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. X, p. 242. RUMPH. Amb. Rariteitkamer, p. 100, Pl. 30, fig. D. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 11, Pl. 4, fig. 7. KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 13, Pl. 2, fig. 9. SOWERBY. Thes. Conchyl. Vol. I, p. 156, Pl. 42, fig. 31. TRYON. Man. of Conch. Vol. VII, p. 10, Pl. 2, fig. 20.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 2 Spec.

5. Terebra crenulata Linné.

LINNÉ. Syst. Nat. Ed. X, p. 741, Nº 416. RUMPH. Amb. Rariteitkamer, p. 100, Pl. 30, fig. E. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 13, Pl. 5, fig. 9. KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 8, Pl. 1, fig. 10; Pl. 3, fig. 7, 8. SOWERBY. Thes. Conchyl. Vol. I, p. 153, Pl. 41, fig. 18, 19; Pl. 42, fig. 32. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 6. TRYON. Man. of Conch. Vol. VII, p. 8, Pl. 1, fig. 1, 2.

Stat. 78. Lumu-Lumu-shoal, Borneo-bank. Coral and coralsand. 1 Spec. Stat. 225. Near South-point of South-Lucipara-island. Reef. 5 Spec.

The specimens belong to the type; though some of the quoted figures may represent the var. *fimbriata* Desh., I have not omitted them in every case.

#### 6. Terebra maculata Linné.

LINNÉ. Syst. Nat. Ed. X, p. 741, N<sup>0</sup> 415.
RUMPH. Amb. Rariteitkamer, p. 100, Pl. 30, fig. A.
KIENER. Coq. Viv. Vol. VIII, Terebra, p. 4, Pl. 1, fig. 1.
KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 11, Pl. A, fig. 1; Pl. 2, fig. 7; Pl. 3, fig. 1.
SOWERBY. Thes. Conch. Vol. I, p. 150, Pl. 42, fig. 33.
REEVE. Conch. Ic. Vol. XII, Terebra, fig. 4.
TRYON. Man. of Conch. Vol. VII, p. 9, Pl. 1, fig. 9, 10.
Stat. 78. Lumu-Lumu-shoal, Borneo-bank. Shore. 1 Spec.

Stat. 142. Laiwui, Coast of Obi Major. 23 M. Mud. 2 Spec.

This and the foregoing 5 species of *Terebra*, are long known forms, about which the Siboga-specimens give no reason for observations, as they are quite typical.

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7. Terebra myuros Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. X, p. 247. RUMPH. Amb. Rariteitkamer, p. 100, Pl. 30, fig. H. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 40, Pl. 14, fig. 34. KOSTER, Martini-Chenin, Conch. Cab. Ed. II, Vol. V, Terebra, p. 20, Pl. 3, fig. 2; Pl. 5, fig. 3. Sowieby, Thes. Conchyl. Vol. I, p. 170, Pl. 42, fig. 37 (*commaculata*). REEVE, Conch. Ic. Vol. XII, Terebra, fig. 31. TEVON, Man. of Conch. Vol. VII, p. 27, Pl. 7, fig. 30.

Stat. 51. Madura-bay, 69-91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec. Stat. 153, 0/3.8 N., 130/24'.3 E. Bougainville-strait, 141 M. Fine and coarse sand with dead shells, 1 Spec.

The specimen from Stat. 51 is rather large, of dark colour, that from Stat. 153 is very young and bleached.

var. scabrella Lamarck.

LAMARCK, I. C. p. 247. KIENER, I. C. p. 41. Pl. 14, fig. 34*a*. KUSTER, I. C. p. 21, Pl. 5, fig. 4. SOWERBY, I. C. p. 170. TRYON, I. C. p. 27 (*mporos* pars).

Stat. 37. Sailus ketjil, Paternoster-islands. 27 M. and less. Coral and coralsand. 1 Spec. Stat. 51. Madura-bay, 69–91 M. Fine grey sand, coarse sand with shells and stones. I Spec.

All the quoted authors agree that LAMARCK has gone too far by dealing with this shell as a separate species. The specimen from Stat. 37 is a young worn shell.

8. Terebra (Striotercbrum) nebulosa Sowerby.

SOWERBY. Tankerv. Cat. App. p. 25. SOWERBY. Thes. Conchyl. Vol. I, p. 162, Pl. 43, fig. 51. REEVE. Conch. lc. Vol. XII, Terebra fig. 1. TRYON. Man. of Conch. Vol. VII, p. 23, Pl. 6, fig. 9.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 2 Spec. Stat. 240. Banda. 9-45 M. Black sand, coral. Lithothamnion. 4 Spec.

- Stat. 258. Tual, Kei-islands. 22 M. Lithothamnion, sand and coral. 1 Spec.
- Stat. 282. Between Nusa Besi and N.E.-point of Timor. 27-54 M. Sand, coral and Lithothamnion. 4 Spec.
- Stat. 299. Buka- or Cyrus-bay, South coast of Rotti-island. 34 M. Mud, coral and Lithothamnion. 2 Spcc.

Stat. 301. Pepela-bay, East coast of Rotti-island. 22 M. Mud, coral and Lithothamnion. 1 Spec.

9. Terebra (Strioterebrum) textilis Hinds.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 156. SOWERBY. Thes. Conchyl. Vol. 1, p. 177, Pl. 44, fig. 73. REEVE. Conch. Ic. Vol. XII. Terebra, fig. 130. TRYON. Man. of Conch. Vol. VII, p. 20, Pl. 5, fig. 75.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 4 Spec.

This species is slightly variable in the number of spirals, which vary from 4 to 7, but agree in other respects; the largest is smaller than Reeve's figure (line on the left) but agrees in colour, which may be too dark in Sowersv's monograph, where it is more brown.

10. Terebra (Strioterebrum) amoena Deshayes.

DESHAVES. Proc. Zool. Soc. Lond. 1859, p. 297.
REEVE. Conch. Ic. Vol. XII, Terebra, fig. 80,
TRYON. Man. of Conch. Vol. VII, p. 19, Pl. 5, fig. 73.
Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud and hard sand. 2 Spec.
Stat. 282. Between Nusa Besi and N.E.-point of Timor. 27-54. M. Sand coral and Litho-thamnion, 1 Spec.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

The specimens are more coarsely sculptured than in REEVE's figure, which was drawn after the unique specimen, as however the Siboga-specimens are more or less variable in this respect, I think it is unnecessary to give them a varietal name. One specimen from Stat. 313 agrees in sculpture, but is somewhat doubtful, as being in no good condition. The species has not been described in Journal de Conchyliologie 1857, as REEVE and TRVON state, the latter with the right page-number of Proceedings Zool. Soc. Lond.

11. Terebra (Strioterebrum) fenestrata Hinds.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 153. SOWERBY. Thes. Conchyl. Vol. I, p. 176, Pl. 44, fig. 86. REEVE. Conch. Ic. Vol. XII, fig. 114. TRYON. Man. of Conch. Vol. VII, p. 28, Pl. 8, fig. 46.

Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. I Spec.
Stat. 169. Atjatuning, West-coast of New-Guinea. 25 M. Mud. I Spec.
Stat. ? I Spec.

12. Terebra (Strioterebrum) exiguoides n. sp. Pl. XXV, fig. 5.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. I Spec.

Shell small, subcylindrically subulate, dark yellowish-brown, with upper part of ribs whitish. Upper whorls wanting, remaining whorls 7, but may have been nearly the double, if one considers the subulate shape; whorls nearly straight, only slightly convex, separated by a deep suture, with slightly curved ribs, 18 on last whorl, divided at the upper part by a groove, consisting of a row of conspicuous punctures between the ribs, but scarcely affecting the ribs themselves and with 4 impressed spiral striae on each whorl, conspicuous between the ribs and at their sides, but very weak on their crests; about 12 spiral striae on last whorl, of which 8 crossed by the ribs, the interstices of the basal ones having more the character of granular lirae, are not ribbed. Aperture elongate, angular above, with a sinus formed by the body whorl and infrasutural belt; right margin obtuse, columellar side with a strong layer of enamel, its interior margin with two folds, canal short, divided by an oblique rib, closely striated above and below it. Interior of aperture smooth, brown. Basal sinus narrow.

Alt.  $11^{1}/_{2}$ , (may have been 19 or 20), lat.  $2^{3}/_{4}$ ; apert. alt. 3, lat.  $1^{1}/_{4}$  Mill.

This species is nearly allied to *T. exigua* Desh., but is much more cylindrical in shape, moreover the subsutural belt is spirally striated in that species, quite smooth in the new one,

these differences connected with other ones of less importance, induced me to consider it as new. Though the upper whorls are wanting, the shell is quite fresh.

13. Terebra Strioterebrum) roseata Adams and Reeve.

ADAMS and REEVE. Moll. Voy, Samarang. p. 30, Pl. 10, fig. 24. REEVE. Conch. lc. Vol. XII, Terebra, fig. 104. TRYON, Man. of Conch. Vol. VII, p. 21, Pl. 5, fig. 90.

Stat. 104. Sulu harbour, Sulu-island. 14 M. Sand. 3 Spec.

This characteristic species has been collected at or near the original locality.

14. Terebra (Strioterebrum) Macgillivrayi Smith. Pl. XXV, fig. 6.

SMITH. Ann. and Mag. Nat. Hist. Ser. 4, Vol. XI, 1873, p. 267.

Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. 1 Spec.

Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand very fine. 2 Spec.

Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 3 Spec.

Stat. 260. Near Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 2 Spec.

The specimen from Stat. 71 is a little doubtful, its subsutural band being less conspicually spirally striated than specimens identified by Mr. SMITH; on the latter I find 2 faint yellowish spiral bands, not mentioned in the original description, and scarcely or not at all perceptible in dead shells, one just below the subsutural band, the other above the suture or on periphery of last whorl; as this species as far as I am aware, has not yet been figured, I thought it desirable to give a figure of a not very large specimen (only 17 Mill.) which is quite fresh and has been examined by its author.

15. Terebra (Strioterebrum) turrita Smith. Pl. XXV, fig. 7.

SMITH. Ann. and Mag. Nat. Hist. Ser. 4. Vol. XI, 1873, p. 266.

Stat. 153. 0° 3'.8 N., 130° 24'.3 E. Bougainville-strait. 141 M. Fine and coarse sand with dead shells. 1 Spec.

Though the specimen seems not to be quite adult, (17 Mill.) and not intact. I thought it worth to give a figure, as it is still unfigured.

16. Terebra (Strioterebrum) marmorata Deshayes.

DESHAVES. Proc. Zool. Soc. Lond. 1859, p. 279. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 91. TRYON. Man. of Conch. Vol. VII, p. 15, Pl. 12, fig. 34.

Stat. 49<sup>a</sup>. Sapeh-strait. 70 M. Coral and shells. 1 Spec. Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. 2 Spec. Stat. 184. Kampong Kelang, South coast of Manipa-island. 36 M. Coralsand. 1 Spec.

The specimen from Stat. 49<sup>a</sup> has the brown subsutural spots less developed than the specimen figured by REEVE.

17. Terebra (Strioterebrum) polygyrata Deshayes.

DESHAVES. Proc. Zool. Soc. Lond. 1859, p. 301. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 146. TRYON. Man. of Conch. Vol. VII, p. 23, Pl. 7, fig. 10.

Stat. 2. Madura-strait. 56 M. Grey mud with some radiolariae. I Spec.

Stat. 4. Djangkar (Java). 9 M. Coarse sand. I Spcc.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. I Spec.

Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. I Spec.

Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand, very fine. 1 Spec.

Stat. 142. Laiwui, coast of Obi Major. 23 M. Mud. 2 Spec.

Stat. 153. 0° 3'.8 N., 130° 24'.3 E. Bougainville-strait. 141 M. Fine and coarse sand with dead shells. 2 Spec.

Stat. 181. Amboina. 54 M. Coralsand. 1 Spec.

Stat. 205. Lohio-bay, Buton-strait. 22 M. Sandy mud. 4 Spec.

Stat. 294. 10° 12'.2 S., 124° 27'.3 E. Timor-sea. 73 M. Soft mud with very fine sand. 1 Spec.

The figure of REEVE is not very characteristic and that of TRYON, which is a rude copy of it, still less fine; amongst the Siboga-specimens, some are of the length recorded by DESHAVES (13 Mill.) or even less, but the largest, from Stat. 114, has a length of 28 Mill., another less typical one, without upper whorls must even have been larger.

18. Terebra (Strioterebrum) violascens Hinds var.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 154. SOWERBY. Thes. Conchyl. Vol. I, p. 177. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 125. TRYON. Man. of Conch. Vol. I, p. 35, Pl. 10, fig. 98.

Stat. 51. Madura-bay. 69-91. M. Fine grey sand, coarse sand with shells and stones. I Spec.
Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 3 Spec.
Stat. 285. South coast of Timor. 34 M. Limit between mud and coral. 2 Spec.

I have not quoted HINDS' figure in the Thesaurus Conchyliorum, as fig. 98 of Plate 45 represents the form of New Guinea. The Siboga-specimens agree rather well with REEVE's figure, copied by TRYON, as they are whitish with a yellowish-brown band below the suture, which colour-variety has been mentioned but not figured by HINDS, in REEVE's figure this band is not visible in my copy. I have failed to find the words ascribed to REEVE by TRYON.

19. Terebra (Strioterebrum) multistriata n. sp. Pl. XXV, fig. 8.

Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 1 Spec.

Stat. 204. Between islands of Wowoni and Buton, Northern entrance of Buton-strait. 75-94 M. Sand with dead shells. I Spec.

Shell moderately large, elongate, very slender, white, with faint traces of an interrupted, yellowish, subsutural zone and two still fainter ones on last whorl. Whorls 25, of which about 3 form a smooth nucleus, with convex whorls, subsequent whorls strongly convex for the genus, separated by a deeply impressed, undulated suture; sculpture consisting of conspicuous, elegantly curved ribs, 14 on last whorl, the crests of ribs smooth, but their sides and the interstices

crossed by numerous impressed striae, or if one considers their interstices by unequal flat lirae; is striae on penultimate whorl, of which one, placed at some distance from the suture, has the appearance of a groove; the ribs nearly reach the base of last whorl, where the number of triae is much more considerable; this last whorl is very long, subangularly rounded below, then strongly contracted. Aperture elongate, narrow, with a not very sharp angle above, ending in a rather long, curved canal below; peristome not intact, columellar margin consisting of an appressed layer of enamel, with a scarcely appreciable groove below, bordering a faint columellar fold, Interior of aperture smooth, white.

Mt. 35, lat.  $4^{1}/_{8}$ ; apert. alt.  $4^{8}/_{10}$ , lat.  $4^{8}/_{5}$  Mill.

The nearest ally of this species may be T. Fortunci Desh. (Journ. de Conch. 1857, p. 79, Pl. 4, fig. 1), but with probably an equal number of whorls (DESHAYES says 20 whorls without the apex, which he suspects may be 5 or 6 more) it is much smaller (T. Fortunci 69 Mill.) there are but 6 spiral striae, of which the first borders the subsutural zone, in the new species this zone is likewise striated, and though the specimen from Stat. 204 has only 12 spiral striae, this number is still twice the number recorded by DESHAYES for T. Fortunei.

20. Terebra (Strioterchrum) affinis Gray.

GRAV. Proc. Zool. Soc. Lond. 1834, p. 60. KIENER. Coq. Viv. Vol. VIII, p. 34, Pl. 11, fig. 24*b* (*pertusa* var.). SOWERBY. Thes. Conchyl. Vol. I, p. 172, Pl. 46, fig. 78. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 39. TRYON. Man. of Conch. Vol. VII, p. 14, Pl. 2, fig. 22.

Stat. 66. Bank between islands of Bahuluwang and Tambolungan, South of Saleyer. 8—10 M. Dead coral, Halimeda, Lithothamnion. 1 Spec.

Stat. 78. Lumu-Lumu-shoal, Borneo-bank. 34 M. Coral and coralsand. 1 Spec.

- Stat. 282. Between Nusa Besi and N.E.-point of Timor. 27-54 M. Sand, coral and Lithothamnion. 2 Spec.
- Stat. 299. Buka- or Cyrus-bay, South coast of Rotti-island. 34 M. Mud, coral and Lithothamnion. 1 Spec.

#### 21. Terebra (Strioterebrum) undulata Gray.

GRAY. Proc. Zool. Soc. Lond. 1834, p. 60. SOWERBY. Thes. Conchyl. Vol. I, p. 172, Pl. 43, fig. 55. REEYE. Conch. Ic. Vol. XH, Terebra, fig. 84. TRYON. Man. of Conch. Vol. VII, p. 22, Pl. 6, fig. 4.

Stat. 37. Sailus ketjil, Paternoster-islands. 27 M. and less. Coral and coralsand. 1 Spec. Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. 2 Spec. Stat. 184. Near Kampong Kelang, South coast of Manipa-island. 36 M. Coral, sand. 1 Spec. Stat. 277. Kulewatti-bay, Dammer-island. 45 M. Sand, white and black mixed. 1 Spec. Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and Mud. 1 Spec.

The specimens belong to the form represented by the quoted figures, with white substatural band, one could think, after TRYON'S words, REEVE would have united even *T. cinctella* Desh, with this species, but RELVI, unites only *T. approximata* Desh, as a synonym, and deals with

cinctella Desh. as a synonym of *picta* Hinds (l. c. sp. 112). I have no materials to form an opinion, in how far these 4 names ought to be united under one head.

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var. laevior n. var. Pl. XXV, fig. 9.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. I Spec.

Differing from the typical specimens by the wanting of spiral striae between the ribs, which are placed closer together, the subsurutal groove only remaining; the white colour is persisting also a little below the groove, a difference which I find also, though less clearly, in other specimens. As the only specimen is young,  $(17^{1}/_{2} \text{ Mill.})$ , I prefer to give it only a varietal name, to describing it as a new species. Indeed the differences are rather insignificant.

22. Terebra (Strioterebrum) columellaris Hinds var.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 151. SOWERBY. Thes. Conchyl. Vol. I, p. 172, Pl. 44, fig. 77; Pl. 45, fig. 127. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 113. TRYON. Man. of Conch. Vol. VII, p. 22, Pl. 6, fig. 93 (*cancellata* var.).

Stat. 240. Banda. 9—45 M. Black sand, coral, Lithothamnion. 1 Spec. Stat. 301. Pepela-bay, East coast of Rotti-island. 22 M. Mud, coral and Lithothamnion. 1 Spec.

The specimen from Stat. 240 is somewhat intermediate in colour between SowERBY's fig. 77 and 127, being lighter coloured than the former, darker than the latter figure; that from Stat. 300, which may be bleached, is still lighter of colour than his fig. 127. The other quoted figures are much less characteristic for the Siboga-specimens.

23. Terebra (Strioterebrum) areolata Adams and Reeve.

ADAMS and REEVE. Zool. Voy. Samarang, p. 30, Pl. 10, fig. 23. TRYON. Man. of Conch. Vol. VII, p. 22, Pl. 6, fig. 94.

Stat. 37. Sailus ketjil, Paternoster-islands. 27 M. and less. Coral and coralsand. 1 Spec. Stat. 204. Between islands of Wowoni and Buton, Northern entrance of Buton-strait. 75—94 M. Sand with dead shells. 1 Spec.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 1 Spec.

The specimen from Stat. 204 is quite bleached and not perfectly identical in sculpture, so its determination is a little doubtful. Most monographers consider this shell as a synonym or slight variety of allied species, but DESHAVES considered it to be a valid species. The Sibogaspecimens are in accordance with this view.

24. Terebra (Strioterebrum) conspersa Hinds.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 151. SOWERBY. Thes. Conchyl. Vol. I, p. 163, Pl. 44, fig. 74. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 127. TRYON. Man. of Conch. Vol. VII, p. 24, Pl. 7, fig. 13.

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Stat. 51 Muaras-reef, East coast of Borneo, Up to 54 M. Hard coralsand, 1 Spec. Stat. 245, Banda, 6 45 M. Black sand, coral, Lithothamnion, 1 Spec. Stat. 248, Near Rumah Lusi, North-point of Tiur-island, Till 54 M. 1 Spec.

Ine specimens vary in the size of the brown stains.

25. Terebra Strioterebrum) plumbea Quoy & Gaimard.

QUOY & GAIMARD, Zool, Voy, Astrol., p. 470, Pl. 36, fig. 29, 30. KIENER, Coq. Viv, Vol. VIII, Terebra, p. 36, Pl. 12, fig. 27. KUSTER, Martini-Chemn, Conch. Cab. Ed. II, Vol. V, Terebra, p. 29, Pl. 6, fig. 11. SOWERBY, Thes. Conchyl. Vol. 1, Terebra, p. 164, Pl. 44, fig. 70. REEVE, Conch. Ic. Vol. XII, Terebra, fig. 111. TRYON, Man. of Conch. Vol. VII, p. 37, Pl. 11, fig. 7.

Stat. 4. Djangkar (Java). 9 M. Coarse sand. 1 Spec.

A very small specimen of somewhat obscure appearance, agreeing with the upper whorls of a specimen from Cebu.

26. Terebra (Strioterebrum) tiurensis n. sp. Pl. XXV, fig. 10.

Stat. 248. Near Ruma Lusi, North-point of Tiur-island. Till 54 M. 1 Spec.

Shell small, acicular, very shining, whitish, with violet apex, scattered reddish-brown spots, just below the subsutural band, in a few cases stretching, though more faintly, down over the whorls. Nuclear whorls, which are violet, as stated above, smooth, convex, about 4 in number, below at the suture with a keel; total number of whorls about 14, postnuclear ones slightly convex, with a deep suture; sculpture consisting of axial ribs, 19 or 20 on penultimate whorl, disappearing on last whorl, ribs and interstices with a deep subsutural groove, having the appearance of punctures in the interstices, for the rest the shell is smooth; last whorl rather regularly convex, contracted below. Aperture oblong, with an acute angle above, narrower at the sutural band, peristome thin, columellar margin short, ending with an oblique curved fold, with a trace of a second fold about halfway.

Alt.  $14^{1}/_{\circ}$ , lat.  $3^{1}/_{4}$ ; apert. alt. 3, lat.  $1^{1}/_{4}$  Mill.

I know no species to which this one is closely allied. It has some superficial resemblance with one of the specimens of T. conspersa, but the deep groove and shining surface, without other spirals makes it quite different.

27. Terebra (Strioterebrum) crenifera Deshayes var.

DESHAVES. Proc. Zool. Soc. Lond. 1859, p. 298.

Stat. 159. 0° 59'.1 S., 129° 48'.8 E. 411 M. Coarse sand. 1 Spec.

The specimen differs from the original description, by the nearly entirely wanting spiral sculpture, the species seems to be rare and this may account for the circumstance that most authors unite it with other ones. I owe the identification to Mr. E. A. SMITH, who was able to compare the Cumingian type.

28. Terebra (Strioterebrum) circinata Deshayes.

DESHAYES. Journ. de Conch. 1857, p. 99, Pl. 4, fig. 6, 7. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 47*a* (straminea var.). TRYON. Man. of Conch. Vol. VII, p. 28, Pl. 8, fig. 44 (straminea var.).

Stat. 2. Madura-strait. 56 M. Grey mud with some radiolariae. I Spec. Stat. 4. Djangkar (Java). 9 M. Coarse sand. 28 Spec.

I think REEVE's figure differs considerably from that of DESHAYES, which represents a smaller shell, the Siboga-specimens are still smaller. Perhaps they belong to DESHAYES' var.  $\beta$ .

29. Terebra (Strioterebrum) straminea Gray.

GRAV. Proc. Zool. Soc. Lond. 1834, p. 62. SOWERBY. Thes. Conchyl. Vol. I, p. 169, Pl. 42, fig. 22, 23. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 47 *b*. TRYON. Man. of Conch. Vol. VII, p. 28, Pl. 8, fig. 42, 43.

Stat. 58. Seba, Savu. Up to 27 M. Sand. I Spec.
Stat. 204. Between islands of Wowoni and Buton, Northern entrance of Buton-strait. 75-94 M. Sand with dead shells. I Spec.

Both specimens are bleached, but perfectly agree in sculpture with typical ones.

30. Terebra (Strioterebrum) tricolor Sowerby.

SOWERBY. Cat. Tankerv. App. p. 24. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 24, Pl. 13, fig. 33 (*taeniolata*). KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 10, Pl. 1, fig. 9 (*taeniolata*). SOWERBY. Thes. Conchyl. Vol. I, p. 168, Pl. 44, fig. 82. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 57. TRYON. Man. of Conch. Vol. VII, p. 27, Pl. 8, fig. 39.

Stat. 282. Between Nusa Besi and N.E.-point of Timor 27-54 M. Sand, coral and Lithothamnion. 1 Spec.

The Siboga-specimen is very light-coloured, nearly quite white, with 4 brown grooves on last whorl, instead of the three, figured by the quoted monographers; as I possess a specimen from the Andaman-isles, with even 6 grooves, of which 5 are brown, but which is otherwise typical, I think it is unnecessary to apply a varietal name, unless one would call them 3-4-6-sulcata and so on. The specimen scarcely seems to be bleached; the fourth groove of the Sibogaspecimen is placed below the periphery, so that it is covered on the upper whorls. In the Andaman-specimen the colourless groove is placed between the two brown grooves, corresponding to those of the quoted figures, one has the same position as in the Siboga-specimen and the basal one in double, making 3 additional grooves.

II

31. Terebra (Strioterebrum) triseriata Gray.

GRAY. Proc. Zool. Soc. Lond. 1834, p. 61. SOWERBY. Thes. Conchyl. Vol. I, p. 171, Pl. 45, fig. 119. R 1 vr. Conch. Ic. Vol. XII, Terebra, fig. 52.

FRYON, Man. of Conch. Vol. VII, p. 30, Pl. 9, fig. 56, 57.

Stat. 162. Between Loslos and Broken-islands, West coast of Salawatti. 18 M. Coral and fine sand with clay and shells. 1 Spec.

The specimen is not very large but characteristic. This species is the type of DALL's Section *Triplostephanus*.

32. Terebra (Strioterebrum) tricincta Smith. Pl. XXV, fig. 11.

SMITH. Ann. Mag. Nat. Hist., Ser. 4, Vol. XIX, 1877, p. 225.

Stat. 71. Makassar and surroundings. 27-36 M. Mud, sand with mud, coral. 3 Spec.

The largest specimen is larger than SMTH's type, being nearly 14 Mill, though not complete. Another specimen of the typical length, 11 Mill., has served for figuring.

33. Terebra (Strioterebrum) Archimedes Deshayes. Pl. XXV, fig. 12.

DESILAYES. Proc. Zool. Soc. Lond. 1859, p. 314.

Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud and hard sand, 1 Spec.

REEVE and TRYON consider this species to be only a synonym of T. funiculata Hinds; as far as I can judge after one specimen of each, Archimedes has the subsutural lira less prominent, the number of lirae of each whorl is less, the lirae are more granular, the last whorl is considerably shorter, moreover the colour is much lighter. As this species seems to be unfigured, I have given a figure.

34. Terebra (Strioterebrum) virgo n. sp. Pl. XXV, fig. 13.

Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. 1 Spec.

Shell elongately turreted, shining, white, upper postnuclear whorls cream-coloured. Whorls  $1 \downarrow_{2}^{1}$ , of which  $2^{1}/_{2}$  form a large, mamillate, smooth nucleus; postnuclear whorls at first rather straight, the last 8 concave; sculpture consisting on lower whorls of a conspicuous, crenulated, subsutural rib, accompanied by a narrower second one, separated by a strong groove, this second rib being likewise crenulated or beaded, concave part of whorls crossed by flat axial ribs and with remote spiral grooves, 3 in number, so that this concave part is 4-lirate, of these lirae the upper 2 are the largest. At all the lower whorls have 6 lirae, inclusive of the subsutural one. Last whorl short, with a larger lira below its angle, separated from upper part by a stronger groove and with some narrower lirae on the base. Aperture subquadrate, with a short, sharp sinus above, a short wide canal below; peristome blunt; columellar margin short, faintly bicostate, with an appressed layer of enamel.

Alt. 25, lat.  $5^3/_1$ : apert. alt. 5 (with canal), lat.  $2^1/_2$  Mill.

This shell is quite different from the preceding one, by its more or less concave whorls, it is much less acicular than *Archimedes*, which it slightly resembles in some respects; the

whorls are much broader, consequently much less in number, *T. Archimedes* of the same lenght would have 24 whorls; the bulbous nucleus may also serve as a good distinctive character.

#### Hastula Adams.

1. Hastula (Hastula) matheroniana Deshayes.

DESHAYES. Proc. Zool. Soc. Lond. 1859, p. 287.

Stat. 296. Near Noimini, South coast of Timor. 8-36 M. Sandy mud. 1 Spec.

REEVE considered this species at first as a synonym of *T. strigillata*, but afterwards in the "corrigenda" separates it. TRVON remained in doubt, but finally refers it to *strigillata*. Unfortunately the only specimen is not in sufficient condition for a figure, as not only the shell has two holes, but the aperture is severely damaged. I think it is sufficiently distinct by its size, acicular shape, sharper ribs and colour.

2. Hastula (Impages) coerulescens Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. X, p. 245. KIENER. Coq. Viv. Vol. VIII, Terebra, p. 17, Pl. 6; Pl. 7, fig. 12*a*, *b*. KÜSTER. Martini-Chemn. Conch. Cab. Ed. II, Vol. V, Terebra, p. 10, Pl. 2, fig. 6. SOWERBV. Thes. Conchyl. Vol. I, p. 159, Pl. 41, fig. 5, 6. REEVE. Conch. Ic. Vol. XII, Terebra, fig. 26, *b*, *c*. TRYON. Man. of Conch. Vol. VII, p. 30, Pl. 10, fig. 75.

Stat. 33. Bay of Pidjot, Lombok. 22 M. and less. Mud, coral and coralsand. 5 Spec. Stat. 279. Roma-island. Reef. 2 Spec.

The Siboga-specimens agree with the quoted figures, those from Stat. 33 are quite white, with occasionally a few dark streaks, those from Stat. 279 are richly variegated with dark ash-coloured bands and streaks.

Fam. CONIDAE.

Conus Linné.

After having made some trials to arrange the species of this genus in the known subgenera and sections, I find that authors are not at all agreeing in this respect, so much so that even one and the same species has been located in different sections, by the same author, in subsequent papers; under these circumstances I have followed TRVON, his monograph being the latest, which enumerates the species in a systematic order; his method, based on the views of WEINKAUFF, brings the species to natural groups; I have only made a few exceptions.

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1. Conus (Marmorei) marmoreus Linné.

LINNÉ. Syst. Nat. Ed. X, p. 712, N<sup>0</sup> 250. RUMPH. Amb. Rariteitkamer, p. 104, Pl. 32, fig. N. KITVI, Conch. Ie, Vol. I, Conus, fig. 74.
KITVI & Coq. Viv. Vol. I, Conus, p. 4, Pl. 2, fig. 1.
SOWIRIA, Thes. Conchyl. Vol. III, p. 2, Pl. 1, fig. 5.
KOSTIK WITNKAUTE, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 60, 156, Pl. 9, 6g. 4, Pl. 18, fig. 3.
TRVON, Man. of Conch. Vol. VI, p. 7, Pl. 1, fig. 1.
Stat. 10. Bay of Kankamaraan, S. coast of Kangeang. Reef. 1 Spec.
Stat. 231. Amboina. Reef. 1 Spec.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 2 Spec.

The specimens are typical, with regularly spread white spots, LINNÉ quotes also RUMPH's fig. N 1, which belongs to the variety or species *bandanus* Hwass.

2. Conus (Literati) millepunctatus Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. XI, p. 36. RIEVE. Conch. Ic. Vol. I, Conus, fig. 78. KIENER. Coq. Viv. Vol. I, Conus, p. 61, Pl. 18, fig. 1. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 23, Pl. 7, fig. 151. KUSTER WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 72, 160, Pl. 11, fig. 2, 3. TRYON. Man. of Conch. Vol. VI, p. 10, Pl. 2, fig. 19 (*literatus* var.).

Stat. 142. Laiwui, coast of Obi Major. 23 M. Mud. 1 Spec.

Though TRVON may be right in uniting this species with C. *literatus* Lin., it differs not only as he says (l. c.) by the spots being smaller and much more numerous and by the absence of the yellow bands, but the character by which I could separate the very numerous specimens I have seen, is that, mentioned by KIENER, that the whorls are spirally striate on the spire, which is not the case with C. *literatus*, where they are smooth.

3. Conus (Literati) eburneus Hwass.

HWASS, Enc. Meth. Vol. I, p. 640, Pl. 324, fig. 1.
REEVE, Conch. Ic. Vol. I, Conus, fig. 106b.
KIENER, Coq. Viv. Vol. I, Conus, p. 67, Pl. 17, fig. 2.
SOWERBY, Thes. Conchyl. Vol. III, Conus, p. 24, Pl. 12, fig. 247-249.
KÜSTER WLINKAUFF, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 105, 176, Pl. 20, fig. 9.
TRYON, Man. of Conch. Vol. VI, p. 11, Pl. 2, fig. 24, 25.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 2 Spec.

4. Conus Literati tessellatus Born.

BORN, Mus. Caes. Vindob. p. 151. RELIVE, Conch. Ic. Vol. I, Conus, fig. 163. KIENLK, Coq. Viv. Vol. I, Conus, p. 68, Pl. 17, fig. 1. SowEREV, Thes. Conchyl. Vol. HI, Conus, p. 24, Pl. 12, fig. 250, 251.

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KÜSTER/WEINKAUFF, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 78, 162, Pl. 13, fig. 1, 2.

TRYON. Man. of Conch. Vol. VI, p. 11, Pl. 2, fig. 26.

Stat. 240. Banda, 9-45 M. Black sand, coral, Lithothamnion. 1 Spec.

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The specimen is small but characteristic.

#### 5. Conus (Literati) suturatus Reeve.

REEVE. Proc. Zool. Soc. Lond. 1843, p. 178. REEVE. Conch. Ic. Vol. I, Conus, fig. 250.

SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 25, Pl. 12, fig. 256.

WEINKAUFF. Martini-Chemn. Conch. Cab, Ed. II, Vol. IV, Conus, p. 223, Pl. 36, fig. 9, 10. TRYON. Man. of Conch. Vol. VI, p. 11, Pl. 2, fig. 29, 29a.

Stat. 164. 1°42'.5 S., 130°47'.5 E. Near West-New-Guinea. 32 M. Sand, small stones and shells. I Spec.

Stat. 184. Near Kampong Kelang, South coast of Manipa-island. 36 M. Coral, sand. 1 Spec.

The specimen from Stat. 184 is in very poor condition, and so agrees very well with Reeve's original figure of a worn shell.

6. Conus (Literati) characteristicus Chemnitz.

CHEMNITZ. Conch. Cab. Ed. I, Vol. XI, p. 54, Pl. 182, fig. 1760, 1761.
REEVE. Conch. Ic. Vol. I, Conus, fig. 167.
KIENER. Coq. Viv. Vol. I, Conus, p. 203, Pl. 42, fig. 1.
SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 26, Pl. 15, fig. 337, 338.
KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 85, 165, Pl. 14, fig. 5, 6.
TRYON. Man. of Conch. Vol. VI, p. 13, Pl. 3, fig. 38, 39.
Stat. 33. Bay of Pidjot, Lombok. 22 M. Mud, coral and coralsand. 1 Spec.

This specimen fully agrees with the quoted descriptions and figures, it is nearly covered by a rather thick, velvety epidermis. REEVE, SOWERBY and KÜSTER give it the habitat "West-Indies", TRYON, West-Africa, West-Indies and Borneo, the latter locality from the label of a London dealer. FISCHER (Cat. Moll. Indo-Chine, 1891, p. 46) records it from the Gulf of Siam, after Morlet. The Siboga-specimen confirms its eastern habitat.

7. Conus (Figulini) figulinus Linné.

LINNÉ. Syst. Nat. Ed. X, p. 715, N° 267. RUMPH. Amb. Rariteitkamer, p. 106, Pl. 31, fig. V. REEVE. Conch. Ic. Vol. I, Conus, fig. 160. KIENER. Coq. Viv. Vol. I, Conus, p. 76, Pl. 28, fig. 1. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 24, Pl. 11, fig. 242. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 80, 163, Pl. 13, fig. 4, 6. TRYON. Man. of Conch. Vol. VI, p. 16, Pl. 4, fig. 57.

Stat. 169. Atjatuning, West coast of New-Guinea. Reef. 1 Spec.

Covered by a thin, fibrous epidermis.

S. C. & Figulini quereinus Hwass.

HWASS, Enc. Meth. p. 681, Pl. 332, fig. 6. RITAF, Conch. E. Vol. I, Conus, fig. 148. KHALR, Coq. Viv. Vol. I, Conus, p. 93, Pl. 32, fig. 1. SOWLERV, Thes. Conchyl. Vol. III, Conus, p. 24, Pl. 11, fig. 239, 240. KUSIFE WIINKAULL, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Conus, p. 82, Pl. 13, fig. 5. TEVON, Man. of Conch. Vol. VI, p. 17, Pl. 4, fig. 59.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 1 Spec. Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

In the specimen from Stat. 313 the shell has a somewhat strange appearance by the deviation of the last whorl, but else it is typical.

9. Conus Arenati) arenatus Hwass.

HWASS, Enc. Meth. p. 621, Pl. 320, fig. 6.
RUMPH, Amb. Rariteitkamer, p. 106, Pl. 33, fig. A. A.
REEVE, Conch. Ic, Vol. 1, Conus, fig. 92.
KHENER, Coq. Viv. Vol. I, Conus, p. 38, Pl. 10, fig. 1, 1a, 1b.
SOWERBY, Thes. Conchyl. Vol. III, p. 8, Pl. 2, fig. 17, 18.
KUSTER WEINKAUFF, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 115, 179, Pl. 22, fig. 6, 7.
TRVON, Man. of Conch. Vol. VI, p. 18, Pl. 4, fig. 66.

Stat. 234. Nahalia-bay, Nusa-Laut-island. Reef. 1 Spec.

The specimen belongs to the form represented by the figures of RUMPH, KIENER  $1\delta$  and KUSTER 6.

10. Conus (Arenati) stercus muscarum Linné.

LINNE, Syst. Nat. Ed. X, p. 715, Nº 269 (pars). RUMPH. Amb. Rariteitkamer, p. 106, Pl. 33, fig. Z. REEVE. Conch. Ic. Vol. I, Conus, fig. 90. KIENER. Coq. Viv. Vol. I, Conus, p. 206, Pl. 58, fig. 3. SOWERBY. Thes. Conchyl. Vol. III, p. 38, Pl. 15, fig. 347. KUSTER-WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 108, 177, Pl. 21, fig. 1 – 3. TRYON. Man. of Conch. Vol. VI, p. 19, Pl. 5, fig. 71.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

11. Conus (Mures) roseus Lamarck.

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LAMARCK, An. s. vert. Ed. II, Vol. XI, p. 32. REEVE, Conch. Ic. Vol. I, Conus, fig. 186. KIENLR, Coq. Viv. Vol. I, Conus, p. 22, Pl. 9, fig. 3. SOWERBY, Thes. Conchyl. Vol. III, p. 8, Pl. 5, fig. 94, 95. WEINKAULE, Martini-Chemn. Conch. Cat. Ed. II, Vol. IV, p. 130, Pl. 25, fig. 8; Pl. 29, fig. 3, 4. TAYON, Man. of Conch. Vol. VI, p. 20, Pl. 5, fig. 73 (*mus.* var.).

Stat. 301. Pepela-bay, East coast of Rotti-island. Reef. 1 Spec.

The authors quoted above, give as habitat of this species "West-Indies"; the Sibogaspecimen, though slightly worn, belongs no doubt to it, I possess and have seen many specimens from the south coast of Java, from Amboina and Borneo. KIENER twice makes use of the name *roseus* in the plates of his monograph, on Pl. 9 and Pl. 107, fig. 4, but in the text this latter is named *C. rosaceus* Kiener; it has been named *C. Kieneri* by REEVE and has nothing to do with the species under consideration, which is allied to *C. mus.* 

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12. Couus (Mures) hebraeus Linné.

LINNÉ. Syst. Nat. Ed. X, p. 715, Nº 268 (ebraeus). RUMPH. Amb. Rariteitkamer, p. 106, Pl. 33, fig. B. B. REEVE. Conch. Ic. Vol. I, Conus, fig. 104b. KIENER. Coq. Viv. Vol. I, Conus, p. 45, Pl. 4, fig. 2. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 9, Pl. 3, fig. 56 (ebraeus). KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 68, 159, Pl. 10, fig. 10, 11; Pl. 23, fig. 1. TRYON. Man. of Conch. Vol. VI, p. 20, Pl. 5, fig. 75. Stat. 34. Labuan Pandan, Lombok. Coral reef. 3 Spec. Stat. 37. Sailus ketjil, Paternoster-islands. 27 M. and less. Coral and coralsand. I Spec. Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. 1 Spec. Stat. 81. Pulu Sebangkatan, Borneo-bank. Reef. 1 Spec. Stat. 86. Dongala, Palos-bay, Celebes. 36 M. Fine grey mud. I Spec. Stat. 129. Kawio- and Kamboling-islands, Karkaralong-group. 23-31 M. Sand. I Spec. Stat. 131. Beo, Karakelang-islands. 13 M. Mud and sand. 2 Spec. Stat. 277. Kulewatti-(Sollot-)bay, Dammer-island. Reef. 1 Spec.

The specimen from Stat. 277 has some tendency to belong to var. *vermicularis* by the confluence of some of the black spots, but it is nearer to the type; the fresh shells are covered with a thin, yellowish, slightly fibrous epidermis.

13. Couus (Mures) spousalis Chemnitz.

CHEMNITZ. Conch. Cab. Ed. I, Vol. XI, p. 56, Pl. 182, fig. 1766, 1767.
REEVE. Conch. Ic. Vol. I, Conus, fig. 109.
KIENER. Coq. Viv. Vol. I, Conus, p. 48, Pl. 14, fig. 4.
SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 10, Pl. 6, fig. 133, 134.
KÜSTER/WEINKAUFF, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 86, 165, Pl. 14, fig. 7, 8.
TRYON. Man. of Conch. Vol. VI, p. 23, Pl. 6, fig. 99 (*Ceylonensis* var.).
Stat. 34. Labuan Pandan, Lombok. Coral reef. 1 Spec.

Stat. 299. Buka- or Cyrus-bay, South coast of Rotti-island. 34 M. Mud, coral and Lithothamnion. 1 Spec.

TRVON has united many forms under *C. ceyloueusis*, giving a nearly worldwide distribution to the species; the Siboga-specimens belong no doubt to *sponsalis*.

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14. Couus (Mures) corouatus Dillwyn.

DILLWYN. Cat. Vol. I, p. 403. REEVE. Conch. Ic. Vol. I, Conus, fig. 143 (minimus).

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THE BINL

KI NEK. Coq. Viv. Vol. I, Comis, p. 64, Pl. 14, fig. 1 minimus).

S (W1 RbA: Thes. Conchyl. Vol. 111, Conus, p. 9, Pl. 3, fig. 54, 55; Pl. 5, fig. 99, 111 (minimus). WELINKAUTT, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 131, Pl. 25, fig. 9–11; Pl. 28, fig. 5, 6.

TEVON, Man. of Conch. Vol. VI, p. 21, Pl. 5, fig. 84, 88 (miliaris).

Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. 1 Spec. Stat. 58. Seba, Savu. Reef. 1 Spec.

Stat. 86. Dongala, Palos-bay, Celebes. 30 M. Fine grey mud. 1 Spec.

Stat. 120. Near Kawio- and Kamboling-islands, Karkaralong-group. Reef. 1 Spec.

Stat. 133. Lirung, Salibabu-island. Reef. 1 spec.

Stat. 152. Wunoh-bay, N.W. coast of Waigeu-island. Reef and 32 M. Lithothamnion bottom. 5 Spec.

Stat. 225. Near South-point of South-Lucipara-island. Reef. 1 Spec.

Stat. 296. Noimini, South coast of Timor. Reef. 1 spec.

Though very variable in colour and markings, the Siboga-specimens belong to the type, represented by the quoted figures.

var. Aristophanes Duclos?

SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 9, Pl. 4, fig. 81, 82. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 219, Pl. 31, fig. 3. TRYON. Man. of Conch. Vol. VI, p. 22, Pl. 5, fig. 90.

Stat. 225. Near South-point of South-Lucipara-island. Reef. 1 Spec.

#### 15. Conus (Mures) musicus Hwass.

HWASS. Enc. Meth. Vol. 1, Pl. 332, fig. 4.

REEVE. Conch. Ic. Vol. I, Conus, fig. 113.

KIENER, Coq. Viv. Vol. 1, Conus, p. 61, Pl. 13, fig. 6.

SOWERBY, Thes. Conchyl. Vol. III, Conus, p. 11, Pl. 6, fig. 145-148.

WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 281, Pl. 48, fig. 6-9. TRYON. Man. of Conch. Vol. VI, p. 11, Pl. 2, fig. 22, 23.

Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. 1 Spec. Stat. 213. South-island, near Saleyer. Reef. 1 Spec.

#### 16. Conus (Varii) varius Linné.

LINNE. Syst. Nat. Ed. X, p. 715, N<sup>0</sup> 270. REEVE. Conch. Ic. Vol. I, Conus, fig. 58. KHENER. Coq. Viv. Vol. I, Conus, p. 20, Pl. 7, fig. 3. SOWERBY. Thes. Conchyl. Vol. 111, Conus, p. 7, Pl. 3, fig. 40-42. KÜSTER WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. H, Vol. IV, Conus, p. 63, 157, Pl. 9, fig. 9. TRVON. Man. of Conch. Vol. VI, p. 25, Pl. 6, fig. 8, 9. Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

The specimen is an empty shell, with large red-brown patches.

17. Conus (Varii) boeticus Reeve var. rivularis Reeve.

REEVE. Conch. Ic. Vol. I, Conus, Suppl. Pl. 6, fig. 261. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 21, Pl. 5, fig. 90. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 256 (*boeticus* pars). TRYON. Man. of Conch. Vol. VI, p. 26, Pl. 6, fig. 13.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. I Spec.

This variety is not only distinguished by its light colour, as WEINKAUFF states, but by its granules all over the body-whorl, as TRVON has rightly observed. The Siboga-specimen is an empty but characteristic shell.

18. Conus (Varii) muriculatus Sowerby.

SOWERBY. Conch. Ill. Pl. I, fig. 1. REEVE. Conch. Ic. Vol. I, Conus, fig. 112. KIENER. Coq. Viv. Vol. I, Conus, p. 52, Pl. 72, fig. 2. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 4, Pl. 5, fig. 89. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 254, Pl. 42, fig. 4, 5. TRYON. Man. of Conch. Vol. VI, p. 26, Pl. 6, fig. 15.

Stat. 164. 1°42'.5 S., 130°47'.5 E. Near West-New-Guinea. 32 M. Sand, small stones and shells. 2 Spec.

The largest specimen which is covered with a rather thick, fibrous epidermis, has the uncommon length of about 40 Mill, against 21 in WEINKAUFF'S Monograph, TRYON reports 1 inch. The other specimen, though smaller, is still more than 30 Mill. in length.

19. Conus (Ammirales) ammiralis Linné.

LINNÉ. Syst. Nat. Ed. X, p. 713, N<sup>0</sup> 257. RUMPH. Amb. Rariteitkamer, p. 108, Pl. 34, fig. B. C. D. REEVE. Conch. Ic. Vol. I, Conus, fig. 11. KIENER. Coq. Viv. Vol. I, Conus, p. 134, Pl. 21, fig. 1. SOWERBY. Thes. Conchyl. Vol. III, p. 18, Pl. 10, fig. 225. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 23, 143, Pl. 3, fig. 5; Pl. 4, fig. 2-4; Pl. 17, fig. 8, 11, 12. TRYON. Man. of Conch. Vol. VI, p. 29; Pl. 8, fig. 44.

Stat. 109. Pulu Tongkil, Sulu-archipelago. 13 M. Lithothamnion-bottom. 1 Spec.

The specimen is very fine, it belongs to the so-called variety with divided central band, represented by KIENER's fig. 1*a*, SOWERBY's fig. 225 and KÜSTER's fig. 5 and 10. Formerly a very rare species, of which the specimen represented by fig. C in RUMPH's Rariteitkamer (l. c.) could not be obtained for "500 gulden".

20. Conus (Ammirales) floridulus Adams & Reeve.

ADAMS & REEVE. Moll. Voy. Samarang. p. 18, Pl. 5, fig. 9. REEVE. Conch. Ic. Vol. I, Conus, Suppl. Pl. 4, fig. 245. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 13, Pl. 5, fig. 97. WEINK VULL, Martini-Chemn, Conch. Cab. Ed. H, Vol. IV, Conus, p. 355, Pl. 6C, fig. 3. EKYON, Man. of Conch. Vol. VI, p. 35, Pl. 10, fig. 78 (voluminalis var.).

Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud and hard sand. 1 Spec. Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

Both specimens are small and rather bleached, especially that from Stat. 133, which is sourcely recognizable, they agree with REEVL's figure, much less so with those of SOWERBY, WUNKAUT and TRYON, the latter two being rude copies of SOWERBY's figure.

21. Conus (Ammirales) papillaris Reeve.

REEVE. Conch. Ic. Vol. 1, Conus, Suppl. Pl. 4, fig. 242. SOWERBY. Thes. Conchyl. Vol. 111, Conus, p. 13, Pl. 16, fig. 377. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. 11, Vol. IV, Conus, p. 357, Pl. 66, fig. 7. TRYON. Man. of Conch. Vol. VI, p. 38, Pl. 11, fig. 8.

Stat. 51. Madura-bay, 69–91 M. Fine grey sand, coarse sand with shells. 1 Spec. Stat. 95. 5°43.5 N., 119°40' E. Sulu-archipelago. 522 M. Stony bottom. 1 Spec.

The specimens are rather small, worn shells, consequently of somewhat doubtful identification.

22. Conus (Ammirales) filicinctus n. sp. Pl. XXV, fig. 1.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells 1 Spec.

Shell rather small, conical, with elevated spire and sharp upper angle, body-whorl slightly attenuated above and below and nearly imperceptibly in the centre. Whorls about 9, (nucleus wanting), gradate, upper ones indistinctly tubercular, with a few spiral striae, disappearing in lower whorls and close-set growth-striae, upper face of whorls slightly excavated, separated by an undulated suture, which is very inconspicuous by the gradation of the whorls; spire white with redbrown blotches. Colour of body-whorl whitish-brown, with irregular redbrown perpendicular clouds and numerous darker spiral lines, 21 in number, leaving a narrow upper zone and a larger submedian one nearly white, with a few scattered redbrown points, giving the impression of 3 other, strongly interrupted lines; base spotted with same colour, with about 7 spiral grooves. Aperture narrow, peristome broken, but will have been (according to growth-striae) straight, with a sinus at its upper part, columellar margin nearly straight.

Alt.  $27^{1}/_{2}$ , lat. 15; apert. alt. 23, lat. about  $2^{1}/_{2}$  Mill.

Though this specimen is in no very splendid condition, it seems to be too characteristic to remain undescribed. In shape it resembles the broader specimens of *C. ammiralis*, but in colourmarkings I know no species in that or in allied groups, which could be compared with it. The number of whorls which may have been 10 to 12 and the different sculpture of the lower whorls, may justify the opinion, that the specimen is adult or nearly so.

23. Conus (Capitanei) vexillum Gmelin.

GMEIIN, Syst. Nat. Ed. XIII, p. 3397. REEVE, Conch. Ic. Vol. I, Conus, fig. 3. 20 KIENER. Coq. Viv. Vol. I, Conus, p. 79, Pl. 34, fig. 1.

SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 27, Pl. 7, fig. 163.

KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 83, 163, Pl. 17, fig. 13.

TRYON. Man. of Conch. Vol. VI, p. 39, Pl. 11, fig. 124, 13, 14.

Stat. 78. Lumu-Lumu-shoal, Borneo-bank. Shore. I Spec.

The specimen is very young and the characteristic colour-pattern of the adult shell is not yet developed.

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24. Conus (Capitanei) miles Linné.

LINNÉ. Syst. Nat. Ed. X, p. 713, Nº 255.
RUMPH. Amb. Rariteitkamer, p. 106, Pl. 33, fig. W.
REEVE. Conch. Ic. Vol. I, Conus, fig. 9.
KIENER. Coq. Viv. Vol. I, Conus, p. 94, Pl. 38, fig. 2.
SOWERBY. Thes. Conchyl. Vol. III. Conus, p. 27, Pl. 7, fig. 157.
KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 82, 163, Pl. 13, fig. 11, 12.
TRYON. Man. of Conch. Vol. VI, p. 40, Pl. 11, fig. 16; Pl. 27, fig. 11.
Stat. 53. Bay of Nangamessi, Sumba. Up to 36 M. Coralsand. I Spec.
Stat. 58. Seba, Savu. Reef. 1 Spec.
Stat. 169. Atjatuning, West coast of New-Guinea. Reef. I Spec.
Stat. 240. Banda. Reef. I Spec.

Stat. 315. East of Sailus Besar, Paternoster-islands. Up to 36 M. Coral and Lithothamnion. I Spec.

The fresh specimens have a rather thick, fibrous epidermis, with about a dozen of spiral rows of hairs, grouped in bundles from 2 to 5 or occasionally more.

25. Conus (Capitanei) capitaneus Linné.

LINNÉ. Syst. Nat. Ed. X, p. 713, N<sup>0</sup> 254. RUMPH. Amb. Rariteitkamer, p. 106, Pl. 33, fig. X. REEVE. Conch. Ic. Vol. I, Conus, fig. 54. KIENER. Coq. Viv. Vol. I, Conus, p. 85, Pl. 20, fig. I. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 27, Pl. 8, fig. 175, 176. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 7, 140, Pl. 13, fig. 8—10. TRYON. Man. of Conch. Vol. VI, p. 40, Pl. 12, fig. 21, 22. Stat. 53. Bay of Nangamessi, Sumba. Up to 36 M. Coralsand. I Spec. Stat. 58. Seba, Savu. Reef. I Spec. Stat. 169. Atjatuning, West coast of New-Guinea. Reef. I Spec. Stat. 193. Sanana-bay, East coast of Sula Besi. Reef. 1 Spec.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

The epidermis of this species is similar to that of the preceeding one, but not quite the 'same in the specimens from Stat. 169 and 58, the latter, being a half-grown shell, has almost 20 spiral rows of longer bristles, often bifid or even trifid near their top, in the other specimen they are scarce and entirely lacking near the base.

26 Conus Capitanei) rattus Hwass var. tahitensis Hwass.

HWASS, Enc. Meth. p. 713, Pl. 7, fig. 338. KHATR, Coq. VIV. Vol. I, Conus, p. 187, Pl. 66, fig. 4 (*taitensis*). SOWIABY, Thes, Conch. Vol. III, Conus, p. 5, Pl. 2, fig. 26 (*tahitensis*). WIINKAUFF, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Conus, p. 183, Pl. 29, fig. 7, 8 *taitensis*). TRVON, Man. of Conch. Vol. VI, p. 41, Pl. 12, fig. 26.

Stat. 78. Lumu-Lumu-shoal, Borneo-bank, Shore, 1 Spec. Stat. 129. Kawio- and Kamboling-islands, Karkaralong-group, Reef. 1 Spec. Stat. 250. Kilsuin, Kur-island, Reef. 1 Spec.

The specimen from Stat. 78 has a thin fibrous epidermis, with about 10 spiral rows of scattered, rather short bristles.

27. Conus (Virgines) flavidus Lamarck.

LAMARCK. An. s. vert. Ed. 11, Vol. XI, p. 45. KIENER. Coq. Viv. Vol. I, Conus, p. 96, Pl. 26, fig. 4. SOWERBY. Thes. Conchyl. Vol. 111, Conus, p. 23, Pl. 8, fig. 168. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. 11, Vol. IV, Conus, p. 191, Pl. 28, fig. 7, 8. TRYON. Man of Conch. Vol. VI, p. 44, Pl. 13, fig. 48.

Stat. 225. Near South-point of South-Lucipara-island. Reef. 2 Spec.

I have not quoted REEVE's fig. 207 of the Conch. Iconica, as his figure does not represent a typical specimen, but probably, judging after its less conical shape and conspicuous granules, it comes near to WEINKAUFF'S *C. maltzanianus*, though it is not improbable that TRYON is right, in considering this latter to be merely a variety; one of the Siboga-specimens resembles it by its more reddish colour and more developed granules, but not in shape, being still quite conical. The epidermis is rather thin and fibrous.

28. Conus (Lirgines) lividus Hwass.

HWASS. Enc. Meth. p. 630, Pl. 321, fig. 5. REEVE. Conch. Ic. Vol. 1, Conus, fig. 211. KIENER. Coq. Viv. Vol. 1, Conus, p. 29, Pl. 9, fig. 2. SOWERBY. Thes. Conchyl. Vol. 111, Conus, p. 4, Pl. 2, fig. 27. KUSTER WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II. Vol. 1V, Conus, p. 108, 176, Pl. 3, fig. 4; Pl. 21, fig. 4. TRYON. Man. of Conch. Vol. V1, p. 45, Pl. 13, fig. 54.

Stat. 81. Pulu Sebangkatan, Borneo-bank. Reef. 1 Spec. Stat. 243. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

Both specimens are young, that from Stat. 81 has a fibrous epidermis, with about 15 spiral rows of short bristles.

2.2

29. Conus (Virgines) sugillatus Reeve.

REEVE. Conch. lc. Vol. I, Conus, fig. 247. SOWEREV. Thes. Conchyl. Vol. III, Conus, p. 4, Pl. 3, fig. 50. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 206, Pl. 32, fig. 9, 10. TRYON. Man. of Conch. Vol. VI, p. 45, Pl. 13, fig. 56 (*lividus* var.).

Stat. 43. Pulu Sarassa, Postillon-islands. Up to 36 M. Coral. I Spec. Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. I Spec.

The specimens are young but easily recognizable; it may be that TRYON is right, that this form is only a variety of the preceding species.

30. Conus (Dauci) lithoglyphus Meuschen.

MEUSCHEN. Mus. Gevers. p. 350.

REEVE. Conch. Ic. Vol. I, Conus, fig. 20.
KIENER. Coq. Viv. Vol. I, Conus, p. 127, Pl. 29, fig. 1.
SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 23, Pl. 9, fig. 185—187 (ermineus).
KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 93, 169, Pl. 6, fig. 5; Pl. 17, fig. 1, 2; Pl. 19, fig. 7; Pl. 29, fig. 5, 6.
TRYON. Man. of Conch. Vol. VI, p. 48, Pl. 14, fig. 74, 75.

Stat. 43. Pulu Sarassa, Postillon-islands. Up to 36 M. Coral. 1 Spec.

Epidermis thin, yellowish, fibrous, with rather long bristles, from single ones to bundles of commonly 4, with rather large interspaces.

#### 31. Conus (Dauci) planorbis Born.

BORN. Test. Mus. Caes. Vindob. p. 164, Pl. 7, fig. 13. REEVE. Conch. Ic. Vol. I, Conus, fig. 197 (senator). KIENER. Coq. Viv. Vol. I, Conus, p. 104, Pl. 27, fig. 1 (senator). SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 36, Pl. 20, fig. 491. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 143, Pl. 13, fig. 7; Pl. 26, fig. 3. TRYON. Man. of Conch. Vol. VI, p. 50, Pl. 14, fig. 81.

Stat. 33. Bay of Pidjot, Lombok. 22 M. and less. Mud, coral and coralsand. I Spec.
Stat. 47. Bay of Bima, near South fort. 55 M. Mnd with patches of fine coralsand. I Spec.
Stat. 64. Kambaragi bay, Tanah Djampeah. Up to 32 M. Coral, coralsand. I Spec.
Stat. 213. Saleyer. Up to 36 M. Mud and mud with sand. I Spec.
Stat. 322. South Tandjong Lajar. South coast of Bawean-island. 32 M. Coral. I Spec.

The specimen from Stat. 213 is nearly uniformly brownish-yellow, darker towards the base, distinguished by some authors as var. *senator*, the other specimens are young and rather bad.

32. Conus (Dauci) lineatus Chemnitz.

CHEMNITZ. Conch. Cab. Ed. I, Vol. X, p. 27, Pl. 138, fig. 1285. REEVE. Conch. Ic. Vol. I, Conus, fig. 131. KIENER. Coq. Viv. Vol. I, Conus, p. 107, Pl. 18, fig. 4. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 36, Pl. 10, fig. 218, 219. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 64, 157, Pl. 9, fig. 10. TRVON. Man. of Conch. Vol. VI, p. 50, Pl. 14, fig. 85.

Stat. 99. North-Ubian. 16—23 M. Lithothamnion-bottom. 1 Spec. Stat. 301. Pepela-bay, East coast of Rotti-island. 22 M. Mud, coral and Lithothamnion. 2 Spec. 33 Cenus Magi magus Linne.

LINNI, Syst. Nat. Ed. N, p. 716, N° 276. RUMIH, Amb. Rariteitkamer, p. 105, Pl. 32, fig. Q. RUMER, Conch. Ic. Vol. I, Conus, fig. 100. KIENTER, Coq. Viv. Vol. I, Conus, p. 283, Pl. 67, fig. 1. SOWLRBY, Thes. Conchyl. Vol. III, Conus, p. 38, Pl. 21, fig. 508-12. KUSTER WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. H, Vol. IV, Conus, p. 36, 146, Pl. 6, fig. 1, 3; Pl. 15, fig. 3, 4; Pl, 19, fig. 5, 6. TRYON, Man. of Conch. Vol. VI, p. 53, Pl. 15, fig. 3.

Stat. 234. Nahalia-bay, Nusa-Laut-island. Reef. 1 Spec.

var. raphanus Hwass.

HWASS, Enc. Meth. p. 722, Pl. 341, fig. 2. REEVE, l. c. fig. 190*a*. KIENER, l. c. fig. 1*a*. SOWERBY, l. c. p. 36, Pl. 20, fig. 494. KUSTER, l. c. p. 13, Pl. 2, fig. 3. TRYON, l. c. fig. 4.

Stat. 169. Atjatuning, West coast of New-Guinca. Reef. 1 Spec. Stat. 172. Island Gisser. Reef. 1 Spec.

The specimens are distinguished by the simple character of their colour-markings.

34. Conus (Magi) pertusus Hwass.

HWASS, Enc. Meth. p. 686, Pl. 336, fig. 2. RLEVE, Conch. Ic. Vol. I, Conus, fig. 25. KIENER, Coq. Viv. Vol. I, Conus, p. 84, Pl. 35, fig. 1. SOWERBY, Thes. Conchyl. Vol. III, Conus, p. 23, Pl. 13, fig. 273. KUSTER WEINKAUFF, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 319, Pl. 58, fig. 7. TRYON, Man. of Conch. Vol. VI, p. 54, Pl. 16, fig. 15.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec. Stat. 315. East of Sailus Besar, Paternoster-islands. Up to 36 M. Coral and Lithothamnion. 1 Spec.

Both specimens are intermediate between the type and the smooth var. *amabilis*, that from Stat. 234 is worn and comparatively smoother than it may have been when fresh, that from Stat. 315 is remarkable by its first being rather smooth but after having been broken, the shell has at once got the true *pertusus*-sculpture, with an irregular demarcation-line, in accordance with the fracture.

35. Conus (Magi) lacteus Lamarck.

LAMARCE, An. s. vert. Ed. II, Vol. XI, p. 64. REEVE, Conch. Ic. Vol. I, Conus, fig. 234. KIENER, Coq. Viv. Vol. I, Conus, p. 268, Pl. 60, fig. 4. WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Conus, p. 239, Pl. 40, fig. 1. TKYON, Man. of Conch. Vol. VI, p. 57, Pl. 17, fig. 51 (spectrum var.).

Stat. 184. Near Kampong Kelang, South coast of Manipa-island. 36 M. Coral, sand. 1 Spec. Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

The specimen from Stat. 234 is quite typical, that from Stat. 184 is young, covered by a thin smooth epidermis, the grooves of the upper part of shell, though very faint, are still visible. Sowerey has figured the allied *C. parius* for this species.

36. Conus (Magi) radiatus Gmelin.

GMELIN. Syst. Nat. Ed. XIII. p. 3386.
REEVE. Conch. Ic. Vol. I, Conus, fig. 217 (Martinianus).
KIENER. Coq. Viv. Vol. I, p. 276, Pl. 40, fig. 2 (martinianus).
SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 35, Pl. 20, fig. 490.
WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 135, Pl. 26, fig. 9; Pl. 28, fig. 1, 2.
TRYON. Man. of Conch. Vol. VI, p. 60, Pl. 18, fig. 71.
Stat. 4. Djangkar (Java). 9 M. Coarse sand. 1 Spec.

Stat. 213. Saleyer. Up to 36 M. Coralreefs, mud and mud with sand. I Spec.

Both specimens are covered by a rather thick, brown epidermis, velvety by numerous hairy spirals.

37. Conus (Magi) ochroleucus Gmelin.

GMELIN. Syst. Nat. Ed. XIII, p. 3391.
REEVE. Conch. Ic. Vol. I, Conus, fig. 138 (*praefectus*).
KIENER. Coq. Viv. Vol. I, Conus, p. 296, Pl. 41, fig. 3 (*praefectus*).
SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 35, Pl. 20, fig. 487-489 (*fasciatus*).
KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II. Vol. IV, Conus, p. 75 (*praefectus*), p. 167, Pl. 15. fig. 6.
TRYON. Man. of Conch. Vol. VI, p. 60, Pl. 18, fig. 75.

Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud and hard sand. 1 Spec.

Young but easily recognizable.

38. Conus (Magi) parius Reeve.

REEVE. Conch. Ic. Vol. I, Conus, fig. 235. KIENER. Coq. Viv. Vol. I, Conus, p. 277, Pl. 60, fig. 3. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 34, Pl. 20, fig. 473 (*lacteus*). WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 150, Pl. 6, fig. 7. TRYON. Man. of Conch. Vol. VI, p. 60, Pl. 18, fig. 72 (*radiatus* var.).

Stat. 231. Amboina. 40 M. Coralsand. 1 Spec. Stat. 279. Rumah-Kuda-bay, Roma-island. 36 M. Mud and sand. 1 Spec.

This species has been considered to be merely a variety of *C. lacteus* and *C. radiatus*, from the former I could always distinguish it, by its smooth upper part of last whorl and brown upper whorls, from the latter by the convex upper part of the whorls, which is slightly excavated in each whorl in *radiatus* and is much more spirally striated there, moreover by its more white colour. The epidermis is dark brown and more or less hairy in spiral rows.

25

SIBOGA-FXPEDITIE XLIN<sup>1</sup>e.

5 I

3. Chas Achatine catus Hwass.

ПWASS, Enc. Meth. p. 707, Pl. 332, fig. 7. КИМА, Conch. Ic. Vol. I, Conus, fig. 70. КИМА, Coq. Viv. Vol. I, Conus, p. 185, Pl. 43, fig. 1. SOWLEBY, Thes. Conchyl. Vol. III, Conus, p. 38, Pl. 13, fig. 277—280. КUSITE WEINKAUTT, Martmi-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 27, 143, Pl. 3, fig. 6. ТКУОМ, Man. of Conch. Vol. VI, p. 63, Pl. 20, fig. 6, 7.

Stat. 225. South-point of South-Lucipara-island. Reef. 1 Spec.

40. Conus (. Ichatini) nigropunctatus Sowerby.

SOWFRBY, Thes. Conchyl. Vol. III, Conus, p. 38, Pl. 15, fig. 342. REEYE, Conch. Ic. Vol. I, Conus, fig. 190, 193 (Adansoni). KIENER, Coq. Viv. Vol. I, Conus, p. 246, Pl. 61, fig. 4 (unicolor). WEINKAUFT, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Conus, p. 250, Pl. 34, fig. 11, 12, TRYON, Man. of Conch. Vol. VI, p. 64, Pl. 20, fig. 8, 9 (catus var.).

Stat. 79 Pulu-Kabala-dua. Borneo-bank. Reef. 1 Spec. Stat. 133. Lirung, Salibabu-island. Reef. 3 Spec. Stat. 193. Sanana-bay, East coast of Sula-Besi-island. Reef. 1 Spec.

I have followed WEINKAUFF's views (l. c.) on the synonymy of this species, which seem to be sufficiently acceptable.

#### 41. Conus (Asperi) mucronatus Reeve.

REEVE. Conch. Ic. Vol. I, Conus, fig. 204. KIENER. Coq. Viv. Vol. I, Conus, p. 216, Pl. 92, fig. 1. SOWFRBY. Thes. Conchyl. Vol. III, Conus, p. 35, Pl. 20, fig. 481. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 351, Pl. 65, fig. 1, 3. TRYON. Man. of Conch. Vol. VI, p. 72, Pl. 22, fig. 73, 74.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 1 Spec.
 Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 1 Spec.
 Stat. 204. Between islands of Wowoni and Buton, Northern entrance of Buton-strait. 22 M. Sandy mud. 1 Spec.

In small specimens the spiral ribs are less flattened and the grooves are more conspicuous.

var. Sibogae n. var. Pl. XXV, fig. 2.

Stat. 274. 5° 28'.2 S., 134° 53'.9 E. Aru-islands, 57 M. Sand and shells, stones, 1 Spec.

Shell with spiral lirac much more numerous, (35 at all), having in many places the character of being split by an intermediate groove; brown colour more intense, forming 3 zones of blotches, one row of smaller ones just below the shoulder, another of larger flames above the centre and a similar broader one near the base, the intermediate zones with spiral rows of lirown points, on the most basal part the colourmarkings consist of larger points.

26

Mt. 26. ht. 13 Mill.

I have been in doubt, whether I should describe this shell as a new species or not. By

its vivid and elegant colourmarkings, reminding those of *C. planiliratus*, as figured by SOWERBY, I was a little misled, but its shape is exactly that of the middle-sized *C. mucronatus* of the Siboga-materials; these specimens vary in the development of the grooves, partly in accordance with age, the ventral side being mainly stronger grooved than the dorsal one. REEVE (l. c.) says: "varying remarkably in their general appearance; most of them are obsoletely coronated, and all have the grooves more or less developed". If more materials were present and the differences proved to be constant, this form might be described as a good species.

42. Conus (Asperi) sulcatus Hwass.

HWASS. Enc. Meth. p. 618, Pl. 321, fig. 6. REEVE. Conch. Ic. Vol. I, Conus, fig. 99. KIENER. Coq. Viv. Vol. I, Conus, p. 31, Pl. 6, fig. 2 (costatus). SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 12, Pl. 2, fig. 30. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 90 (asper), p. 167, Pl. 16, fig. 1-3. TRYON. Man. of Conch. Vol. VI, p. 73, Pl. 23, fig. 79<sup>a</sup>.

Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand, very fine. 1 Spec. Stat. 318. 6°36'.5 S., 114°55'.5 E. Java-sea. 88 M. Fine, yellowish-grey mud. 2 Spec.

The variability of this well-known species, as far as concerns the sharpness of the spiral ridges, confirms my views on the var. *Sibogae* of the former species.

43. Conus (Asperi) mindanus Hwass var. β Reeve.

REEVE. Conch. Ic. Vol. I, Conus, fig. 115<sup>b</sup>. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 11, Pl. 5, fig. 86.

Stat. 164. 1°42'.5 S., 130°47'.5 E. Near West New-Guinea. 32 M. Sand, small stones and shells. 1 Spec.

Unfortunately the shell is quite bleached. As it is of interest to be certain about its identification, as much controversy has arisen about its true habitat, East-Indian or West-Indian, I asked the opinion of Mr. E. A. SMITH, who thinks I may be right; if this be so, the authors who doubt its East-Indian provenience, may not have possessed the true species (WEINKAUFF, TRYON).

44. Conus (Asperi) Sowerbyi Reeve.

REEVE. Conch. Ic. Vol. I, Suppl. emend. p. 2. REEVE. Conch. Ic. Vol. I, Conus, fig. 77 *a* (sinensis). SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 12, Pl. 16, fig. 379. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 282, Pl. 49, fig. 1, 3. TRYON. Man. of Conch. Vol. VI, p. 76, Pl. 24, fig. 99, 1.

Stat. 77. Borneo-bank. 59 M. Fine grey coralsand. 2 Spec.
Stat. 153. 0° 3'.8 N., 130° 24'.3 E. Bougainville-strait. 141 M. Fine and coarse sand with dead shells. 1 Spec.

Stat. 204. Between islands of Wowoni and Buton. 75-94 M. Sand with dead shells. 2 Spec. Stat. 260. Near Nulu Jaan, Kei-islands. 90 M. Sand, coral and shells. 1 Spec.

Stat. 318. 6° 36'.5 S., 114° 55'.5 E. Java-Sea. 88 M. Fine yellowish-grey mud. 1 Spec.

Symposition and Mag. Nat. Hist. Ser. 7, Vol. XIII, 1904, p. 454) has recorded this specific in an the Coromandel coast, in 41 fath.; else the monographs give more remote localities, it and factorial frequencies islands.

15. Conus Asperi turriculatus Sowerby.

SOWLRBY, Thes. Conchyl. Vol. III, Conus, Suppl. I, p. 328, Pl. 27, fig. 643, 644, KILNER, Coq. Viv, Vol. I, Conus, p. 155, Pl. 72, fig. 1 (acutangulus)). WILNKAULE, Martini-Chemn, Conch. Cab. Ed. H, Vol. IV, Conus, p. 377, Pl. 69, fig. 10, 11, TRVON, Man. of Conch. Vol. VI, p. 74, 75, Pl. 23, fig. 89 (cancellatus jun.). SMITH, Zool. Coll. "Alert", p. 487.

Stat. 110. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 1 Spec. Stat. 204. Between islands of Wowoni and Buton. 75—94 M. Sand with dead shells. 2 Spec. Stat. 240. Banda. 0—45 M. Black sand, coral. 1 Spec. Stat. 301. Pepela-bay. East coast of Rotti-island. 22 M. Mud, coral and Lithothamnion. 1 Spec.

1 have followed the suggestions of SMITH, I. c. and Ann. and Mag. Nat. Hist. Ser. 6, Vol. XIV, 1894, p. 160, concerning the synonymy of this species. The Siboga-specimens are coronated.

46. Conus (Asperi) aculeiformis Reeve.

REEVE. Conch. Ic. Vol. I, Conus, fig. 240*b*. SOWERBY, Thes. Conchyl. Vol. III, Conus, p. 12, Pl. 16, fig. 370. WEINKAUFF. Martini-Chemin. Conch. Cab. Ed. II, Vol. IV, Conus, p. 258, Pl. 43, fig. 2, 3. TRYON. Man. of Conch. Vol. VI, p. 75, Pl. 23, fig. 90.

Stat. 51. Madura-bay, 69—91. M. Fine grey sand, coarse sand with shells, 1 Spec.
Stat. 116. West of Kwandang-bay-entrance, 72 M. Fine sand with mud. 2 Spec.
Stat. 204. Between islands of Wowoni and Buton, 75—94 M. Sand with dead shells, 1 Spec.
Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

TRYON unites with this species a multitude of more or less allied, elongated *Coni*, but SMITH, Ann. and Mag. Nat. Hist. Ser. 7, Vol. XIII, 1904, p. 454, 455), admits a large amount of variability, without falling in that extreme.

47. Conus (Asperi) delicatus n. sp. Pl. XXV, fig. 3.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells. 1 Spec.

Shell elongately fusiform, with high spire, smooth, shining, yellowish-white, with yellowbrown flames, formed by series of quadrangular blotches. Whorls 8, of which about  $3^{1}/_{2}$  (upper one not intact form a quite smooth, convexly-whorled nucleus, subsequent whorls angular, first with 3, lower on with 2 spiral grooves, slightly coronated in upper post-nuclear whorls, the grooves on lower whorls punctured, space between the deep suture and upper groove, with perpendicular remote riblets, that between lower groove and suture, with very oblique striae; infra-angular t rt of last worl in its upper part scarcely grooved, but with a few spiral rows of punctures, transformed in distinctly punctured grooves towards the median and on the basal part, 28 at all; last whorl contracted towards the base, its outline being concave. The brown colour on the last whorl, forms median and basal interrupted bands, on the spire it is arranged in regular blotches. Aperture narrow, angular above.

Alt.  $18^{1/2}$ , lat. 6 Mill.

Though the specimen is evidently young and allied to the preceding species, I could not unite it, as the particulars of sculpture of the considerably lower spire differ too much from that of *C. aculeiformis*, the whorls being much more prominent at the suture, with quite different sculpture, the shell is much less grooved and more shining, the colour, though perhaps a little faded, seems to be much lighter. I had sent it to Mr. E. A. SMITH, who did not find it identical with any form of *C. aculeiformis*.

#### 48. Conus (Asperi) elegans n. sp. Pl. XXV, fig. 4.

Stat. 153. 0° 3'.8 N., 130° 24'.3 E. Bougainville-strait. 141 M. Fine and coarse sand with dead shells. 2 Spec.

Shell elongately fusiform, with high spire, whitish with redbrown flames, forming two interrupted bands, one about the median part, the second near the base, spire with flamelike blotches of the same colour. Whorls 11 or 12, of which about 3 form a smooth nucleus, with convex whorls; subsequent whorls carinated, the keel occupying in the upper whorls the centre in the lower ones the base of each whorl, in the upper ones it is elegantly beaded, these beads becoming obscure lower on, the angle of last whorl being nearly plain, the upper face of lower whorls is slightly excavated, with about 5 spiral lirae in the excavation, crossed by strongly curved riblets; body whorl grooved all over, with about 30 grooves below the angle, the grooves narrower than the intermediate lirae on the upper part, becoming larger than the lirae near and leaving only threadlike spirals on the base; last whorl attenuated towards the base. The grooves are coarsely punctured, the lirae with fine axial striae. Aperture long, narrow, with oblique upper part of peristome.

Alt. 21, lat.  $7^{1}/_{2}$ ; apert. alt. 14<sup>3</sup>/<sub>4</sub> Mill.

These specimens have the appearance of being not full-grown, but the sculpture of the spire is quite different from that of the preceding and other allied species.

49. Conus (Asperi) vimineus Reeve.

REEVE. Conch. Ic. Vol. I. Conus, Suppl. Pl. 7, fig. 269. SOWERBY. Thes. Conchyl, Vol. III, Conus, p. 13, Pl. 16, fig. 357. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 377, Pl. 69, fig. 9 (vimiceus). TRYON. Man. of Conch. Vol. VI, p. 75, Pl. 23, fig. 91 (aculeiformis var.).

Stat. 207. Buton-strait. 148 M. Grey mud. 1 Spec.

One of the species united by TRYON in his *aculeiformis*-muddle; characterized by its fine cancellated sculpture.

5 C nus Asperis insculptus Kiener.

KH MER, Coq. VIV. Vol. I, Conus, p. 300, Pl. 90, fig. 2, RITVI. Conch. Ic. Vol. I, Conus, Suppl. Pl. 7, fig. 267. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 12, Pl. 16, fig. 363. WIINKAUFE. Martini-Chemin. Conch. Cab. Ed. H, Vol. IV, Conus, p. 354, Pl. 65, fig. 4, 5, TRYON. Man. of Conch. Vol. VI, p. 75, Pl. 23, fig. 93 (aculeiformis pars).

Stat. 2. Madura-strait, 56 M. Grey mud with some radiolariae, 1 Spec.
Stat. 95, 5 43.5 N., 119 40 E. Sulu-archipelago, 522 M. Stony bottom, 2 Spec.
Stat. 260. Near Northpoint of Nuhu Jaan, Kei-islands, 90 M. Sand, coral and shells, 2 Spec.
Stat. 285. South coast of Timor, 34 M. Limit between mud and coral. 1 Spec.
Stat. 319. 6 10.5 S., 114° 37 E. 82 M. Java-sea. Fine yellowish-grey. mud. 1 Spec.

The specimens are dead shells, not very characteristic; the species has been thrown together with *C. aculeiformis* by TRYON.

51. Conus (Terebri, glans Ilwass.

HWASS. Enc. Meth. p. 725, Pl. 342, fig. 7. RUMPH. Amb. Rariteitkamer. p. 106, Pl. 33, fig. D. D. REEVE. Conch. Ic. Vol. I, Conus, fig. 145. KIENER. Coq. Viv. Vol. I, Conus, p. 300, Pl. 80, fig. 1*a*. SOWEREV. Thes. Conchyl. Vol. III, Conus, p. 46. Pl. 22, fig. 530. KÜSTER WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 46, 151, Pl. 7, fig. 5. TRYON. Man. of Conch. Vol. VI, p. 79, Pl. 25, fig. 26.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 3 Spec.

The specimens belong to the short, granular form, more especially represented by the quoted figures.

52. Conus (Terebri) terebra Born.

BORN. Test. Mus. Caes. Vindob. p. 162. REEVE. Conch. Ic. Vol. I, Conus, fig. 38 (*terebellum*). KIENER. Coq. Viv. Vol. I, Conus, p. 208, Pl. 34, fig. 2. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 46, Pl. 23, fig. 559. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 87, 166, Pl. 15, fig. 1. TRYON. Man. of Conch. Vol. VI, p. 80, Pl. 25, fig. 31.

Stat. 33. Bay of Nangamessi, Sumba. Up to 36 M. Coralsand. 1 spec.

The specimen is young, covered by a rather dark brown, fibrous epidermis, but easily recognizable.

53. Conus (Terebri) nussatella Linné.

LINNE, Syst. Nat. Ed. N, p. 716, N° 273. RUMPH, Amb. Rariteitkamer, p. 106, Pl. 33, fig. E. E. RLEVE, Conch. Ic. Vol. I, Conus, fig. 56. KHENER, Coq. Viv. Vol. I, Conus, p. 299, Pl. 53, fig. 2. SOWELEY, Thes. Conchyl. Vol. III, Conus, p. 45, Pl. 23, fig. 553, 554. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 43, 151, Pl. 7, fig. 3. TRYON. Man. of Conch. Vol. VI, p. 80, Pl. 25, fig. 35.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. I Spec.

54. Conus (Terebri) clavus Linné.

LINNÉ. Syst. Nat. Ed. X, p. 716, N<sup>0</sup> 272. REEVE. Conch. Ic. Vol. I, Conus, p. 194. KIENER. Coq. Viv. Vol. I, Conus. p. 321, Pl. 87, fig. 2. SOWERBY. Thes. Conchyl. Vol. III, Conus. p. 45, Pl. 23, fig. 561. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 47, 152, Pl. 7, fig. 6; Pl. 15, fig. 2. TRYON. Man. of Conch. Vol. VI, p. 81, Pl. 25, fig. 37, 38.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

As TRYON observes, this species is allied to the Section Texti by its colour-pattern.

55. Conus (Terebri) circumcisus Born.

BORN. Test. Mus. Caes. Vindob. p. 163. REEVE. Conch. Ic. Vol. I, Conus, fig. 13 (dux). KIENER. Coq. Viv. Vol. I, Conus, p. 292, Pl. 62, fig. 1 (dux). SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 45, Pl. 23 and Frontispiece, fig. 562. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 12 (dux), p. 141, Pl. 2, fig. 2; Pl. 3, fig. 2; Pl. 15, fig. 5. TRYON. Man. of Conch. Vol. VI, p. 83, Pl. 25, fig. 39, 40.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. I Spec.

#### 56. Conus (Tulipae) striatus Linné.

LINNÉ. Syst. Nat. Ed. X, p. 716, N<sup>0</sup> 277. RUMPH. Amb. Rariteitkamer, p. 103, Pl. 31, fig. F. REEVE. Conch. Ic. Vol. I, Conus, fig. 179. KIENER. Coq. Viv. Vol. I, Conus, p. 280. Pl. 47, fig. 1, 1<sup>a</sup>. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 39, Pl. 23, fig. 557. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 121, 181, Pl. 23, fig. 6-8. TRYON. Man. of Conch. Vol. VI, p. 85, Pl. 26, fig. 67.

Stat. 33. Bay of Pidjot, Lombok. 22 M. and less. Mud, coral and coralsand. I Spec. Stat. 225. South-point of South Lucipara-island. Reef. I Spec. Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. I Spec.

57. Conus (Tulipae) tulipa Linné.

LINNÉ. Syst. Nat. Ed. X, p. 717, N<sup>0</sup> 282. REEVE. Conch. Ic. Vol. I, Conus, fig. 128. KIENER. Coq. Viv. Vol. I, Conus. p. 346, Pl. 12, fig. 2. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 40, Pl. 22, fig. 551, 552.

K) (1 K WI INKAULL, Martini-Cliemin, Conch. Cab. Ed. II, Vol. IV, Conus, p. 120, 180, Pl. 23 10. 2, 3, Pl. 21, ng. 8, 9.

1. YON, Man. of Conch. Vol. VI, p. 87, Pl. 28, fig. 80, 81.

Stat. 131, Beo, Karakelang-islands, 15 M. Mud and sand, 1 Spec.

The epidermis of this species is very fine, rather thin, fibrous, with 7 spiral rows of turns at flat spines at rather large intervals.

58. Conus (Tulipae) obscurus Reeve.

RTEVE, Conch. Ic. Vol. I, Conus, fig. 82. KHENER, Coq. Viv. Vol. I, Conus, p. 347, Pl. 68, fig. 2. SOWERBY, Thes. Conchyl. Vol. III, Conus, p. 40, Pl. 22, fig. 526. WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Conus, p. 322, Pl. 59, fig. 7, 8, TRYON, Man. of Conch. Vol. VI. p. 88, Pl. 28, fig. 83 (vuolaceus pars).

Stat. 79. Pulu Kabala-dua, Borneo-bank. Reef. 1 Spec.

59. Conus (Tulipae) geographus Linné.

LINNE. Syst. Nat. Ed. X, p. 718, N<sup>a</sup> 283. RUMPH. Amb. Rariteitkamer, p. 103, Pl. 31, fig. G. REEVE. Conch. Ic. Vol. I, Conus, fig. 130. KIENER. Coq. Viv. Vol. I, Conus, p. 345, Pl. 12, fig. 1. SOWEREV. Thes. Conchyl. Vol. III, Conus, p. 40, Pl. 23, fig. 560. KÜSTER WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 111, 177, Pl. 21, fig. 7. TRYON. Man. of Conch. Vol. VI, p. 88, Pl. 28, fig. 84.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

60. Conus (Texti) textile Linné.

LINNE. Syst. Nat. Ed. X, p. 717, N<sup>0</sup> 278. RUMPH. Amb. Rariteitkamer, p. 105, Pl. 32, fig. O. P. REEVE. Conch. Ic. Vol. I, Conus, fig. 209. KIENER. Coq. Viv. Vol. I, Conus, p. 328, Pl. 90, fig. 1. SOWEREV. Thes. Conchyl. Vol. III, Conus, p. 41, Pl. 23, fig. 567. KÜSTER WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 51, 154. Pl. 7, fig. 10; Pl. 8, fig. 4-6. TRYON. Man. of Conch. Vol. VI, p. 89, Pl. 29, fig. 92, 93.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

Of this and the preceding two species only empty shells of the well-known typical form have been collected.

61. Conus (Texti legatus Lamarck.

LAMARER, An. s. vert. Ed. II, Vol. XI, p. 123. REEVE, Couch. Ic. Vol. I, Conus, fig. 85. KHENER, Coq. Viv. Vol. I, Conus, p. 323. Pl. 89, fig. 3. SOWERBY, Thes. Conchyl. Vol. III, Conus, p. 41, Pl. 23, fig. 566.

WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 237, Pl. 39, fig. 6. TRYON. Man. of Conch. Vol. VI, p. 90, Pl. 30, fig. 5 (*textile* var.).

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 1 Spec.

The specimen is small but characteristic, and like SOWERBY (l. c.) says, easily recognized by its roseate hue.

62. Conus (Texti) episcopus Hwass.

HWASS. Enc. Meth. p. 748, Pl. 345, fig. 2.
REEVE. Conch. Ic. Vol. I, Conus, fig. 189.
KIENER. Coq. Viv. Vol. I, Conus, p. 319, Pl. 91, fig. 1.
SOWERBY. Thes. Concluyl. Vol. III, Conus, p. 44, Pl. 24, fig. 596—598.
KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 48, 152, Pl. 35, fig. 1—3.
TRYON. Man. of Conch. Vol. VI, p. 93, Pl. 31, fig. 23, 24 (*omaria* pars).
Stat. 133. Lirung, Salibabu-island. Reef. 2 Spec.
Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. 2 Spec.
Stat. 282. Between Nusa Besi and the N.E.-point of Timor. Reef. 1 Spec.

The specimens differ in shape and colourmarkings, but agree in the characteristic spire.

63. Conus (Texti) omaria Hwass.

HWASS. Enc. Meth. p. 714, Pl. 339, fig. 3. REEVE. Conch. Ic. Vol. I, Conus, fig. 177. KIENER. Coq. Viv. Vol. I, Conus, p. 342, Pl. 79, fig. 1. SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 44, Pl. 24, fig. 594, 595. KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, p. 54, 154, Pl. 8, fig. 7. TRYON. Man. of Conch. Vol. VI, p. 92, Pl. 31, fig. 19.

Stat. 60. Haingsisi, Samau-island near Timor. Reef. 1 Spec.

64. Conus (Texti) canonicus Hwass.

HWASS. Enc. Meth. p. 749, Pl. 345, fig. 5.
RUMPH. Amb. Rariteitkamer, p. 105, Pl. 32, fig. O.
REEVE. Conch. Ic. Vol. I, Conus, fig. 165.
KIENER. Coq. Viv. Vol. I, Conus, p. 335, Pl. 95, fig. 1.
SOWERBY. Thes. Conchyl. Vol. III, Conus, p. 42, Pl. 23, fig. 568.
KÜSTER/WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Conus, p. 58 (archiepiscopus var.) p. 299, Pl. 53, fig. 7-9.
TRYON. Man. of Conch. Vol. VI, p. 90, Pl. 30, fig. 2 (textile var. archiepiscopus pars).
Stat. 133. Lirung, Salibabu-island. Reef. 1 Spec.

Stat. 234. Nalahia-bay, Nusa-Laut-island. Reef. I Spec.

This species and some of the preceding ones, have been considered by many authors to be only varieties of each other, but as I could easily separate the few specimens, I have not followed their views.

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SIBOGA-EXPEDITIE XLIX<sup>1</sup> $\mathcal{E}_{\tau}$ 

05. Chu Texti anreus Hwass?

Hwyss, Enc. Meth. p. 742, Pl. 346, fig. 1.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 1 Spec.

The specimen is very young and bad, however the spire agrees with that of full-grown ones, so 1 may record it with doubt, but have not quoted the different authors, as of course none of their figures agrees with the specimen of 15 Mill.

The Siboga-collection contains moreover some specimens of *Conns*, belonging to various sections, but they are too bad or too young for identification, so I have omitted them.

#### Fam. PLEUROTOMIDAE.

#### Pleurotoma Lamarck.

1. Pleurotoma babylonia Linné.

LINNE. Syst. Nat. Ed. X, p. 753, Nº 479. RUMPII. Amb. Rariteitkamer, p. 96, Pl. 29, fig. L. KIENER. Coq. Viv. Vol. IV, Pleurotoma, p. 4, Pl. 1, fig. 1. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 5. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 10, Pl. A, fig. 8; Pl. 1 fig. 4, 5. TRYON. Man. of Conch. Vol. VI, p. 162, Pl. 1, fig. A—C, fig. 1. Stat. 258. Tual, Kei-islands. 22 M. Lithothamnion, sand and coral. 1 Spec.

The specimen is uncommonly large, more than 100 Mill. in length, though the apex is not complete, with complete spire it certainly should have reached 105 Mill. and so considerably surpassed the measurements of WEINKAUFF's and TRYON'S specimens.

2. Pleurotoma Garnonsi Reeve.

REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 4. KIENER, Coq. Viv. Vol. IV, Pleurotoma, p. 5, Pl. 1, fig. 2 (*babylonia* var.). WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 12, Pl. 2, fig. 1-4. TRYON. Man. of Conch. Vol. VI, p. 163, Pl. 2, fig. 5.

Stat. 162. Between Loslos and Broken-islands, West coast of Salawatti. 18 M. Coarse and fine sand with clay and shells. 1 Spec.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 2 Spec.

The specimen from Stat. 162 has lost its lower whorls and is a little doubtful, however the sculpture and dark spots agree with those of upper whorls of complete specimens.

3. Pleurotoma crispa Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 353. RLEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 11. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 9, Pl. 1, fig. 1, 2. TRYON. Man. of Conch. Vol. VI, p. 163, Pl. 1, fig. 6.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

WEINKAUFF and TRVON are in doubt about the validity of this species and consider it to be merely a variety (WEINKAUFF) or a younger state (TRVON) of *Pl. grandis*; as the name *crispa* has priority and the Siboga-specimen belongs no doubt to that form, it is at all events safe to apply this name.

4. Pleurotoma tigrina Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 352. KIENER. Coq. Viv. Vol. IV, Pleurotoma, p. 10, Pl. 8, fig. 1. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 3. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 13, Pl. 2, fig. 5—7. TRYON. Man. of Conch. Vol. VI, p. 164, Pl. 2, fig. 10.

Stat. 4. Djangkar (Java). 9 M. Coarse sand. 1 Spec.

Stat. 99. North-Ubian. 16–23 M. Lithothamnion-bottom. I Spec.

Stat. 164. 1°42'.5 S., 130°47'.5 E. Near West New-Guinea. 32 M. Sand, small stones and shells. 1 Spec.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 4 Spec.

Stat. 299. Buka- or Cyrus-bay, South coast of Rotti-island. 34 M. Mud, coral and Lithothamnion. 6 Spec.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

Rather variable in the dark spots, but otherwise the specimens vary only in size, according to their age.

5. Pleurotoma marmorata Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 352. KIENER. Coq. Viv. Vol. IV, Pleurotoma, p. 9, Pl. 6, fig. 4. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 21 (marmorata), fig. 139 (hastula). WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, Pl. 3, fig. 4. TRYON. Man. of Conch. Vol. VI, p. 165, Pl. 2, fig. 16 (marmorata), fig. 17 (hastula).

Stat. 4. Djangkar (Java). 9 M. Coarse sand. 4 Spec.

Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. I Spec.

Stat. 51. Madura-bay. 69-91. M. Fine grey sand, coarse sand with shells and stones. 3 Spec.

- Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand, very fine. 2 Spec.
- Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 2 Spec.

Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud, and hard sand. 3 Spec.

- Stat. 169. Near Atjatuning, West coast of New-Guinea, 57 M. Mud, 1 Spec.
- Stat. 204. Between islands of Wowoni and Buton, Northern entrance of Buton-strait. 75-94 M. Sand with dead shells, I Spec.
- Stat. 206. Buton-strait. 51 M. Fine green mud. 1 Spec.
- Stat. 231. Amboina. 40 M. Coralsand. 4 Spec.
- Stat. 260. Near Nuhu Jaan, Kei-islands. 27 M. Mud. 3 Spec.
- Stat. 306. 8° 27' S., 122° 54'.5 E. Savu-sea. 247 M. Sandy mud. 2 Spec.
- Stat. 318. 6° 36'.5 S., 114° 55'.5 E. Java-sea. 88 M. Fine, yellowish-grey mud. 1 Spec.
- Stat. 320. 6° 5' S., 114° 7 E. Java-sea. 82 M. Fine grey mud. 1 Spec.

Stat. ? I Spec.

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The permens, as usual, vary much in colour-pattern, less so in shape and sculpture, how vir the specimens from Stat. 300 are considerably different by their much less prominent kell, especially in the lower whorls, where it is double; these specimens may belong or come very n ar to the variety mentioned by Surru from the Arabian sea, off Gujerat (Ann. and Mag. Nat. Hist. Ser. 6, Vol. XVI, 1865, p. 203). In the upper whorls the difference is less prominent.

6. Pleurotoma Hemipleurotoma cingulifera Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 350.

KIENER, Coq. Viv. Vol. IV, Pleurotoma, p. 17, Pl. 17, fig. 1.

RFEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 1.

WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 13, Pl. 2, fig. 8, Pl. 4, fig. 8.

TRYON. Man. of Conch. Vol. VI, p. 166, Pl. 3, fig. 23.

Stat. 89. Palu Kaniungan ketjil. Reef. 1 Spec.

The only specimen, without columellar margin, appears to have been inhabited by a hermit-crab.

7. Pleurotoma (Hemipleurotoma) cryptorhaphe Sowerby.

SOWERBY, Cat. Tankerv. Suppl. p. 14, N<sup>0</sup> 1503. KIENER, Coq. Viv. Vol. IV, Pleurotoma, p. 12, Pl. 7, fig. 1 (*Woodii*). REEVE, Conch. Ic. Vol. 1, Pleurotoma, fig. 7. WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. 11, Vol. IV, Pleurotoma, p. 20, Pl. 4, fig. 4-7. TRYON, Man. of Conch. Vol. VI, p. 168, Pl. 3, fig. 30, 31.

Stat. 99. North-Ubian, 16-23 M. Lithothamnion-bottom. 1 Spec.

8. Plenrotoma (Hemipleurotoma) jubata Hinds.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 37. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 52. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. 11, Vol. IV, p. 92, Pl. 20, fig. 1, 3. TRVON. Man. of Conch. Vol. V1, p. 171, Pl. 4, fig. 46.

Stat. 204. Between islands of Wowoni and Buton, Northern entrance of Buton-strait, 75—94 M. Sand with dead shells. 1 Spec.

The only specimen is a bleached shell.

9. Plenrotoma (Hemiplenrotoma) acutigemmata Smith.

SMITH. Ann. and Mag. Nat. Hist. Ser. 4. Vol. XIX, 1877, p. 489. TRVON. Man. of Conch. Vol. VI, p. 171 (*jubata* pars).

SMITH. Ann. and Mag. Nat. Hist. Ser. 7, Vol. XIII, 1904, p. 457.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 1 Spec.
Stat. 164. 1 42.5 S., 130° 47.5 E. Near West-New-Guinea, Sand, small stones and shells. 3 Spec.
Stat. 285. Near South coast of Timor. 34 M. Limit between mud and coral, Lithothamnion. 4 Spec.

The specimen from Stat.  $_{17}$  is rather small, only  $12^{1}/_{2}$  Mill. (SMITH's type 22 Mill.) but it agrees very well with the description, the generales are well developed; in the other specimens,

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one of which reaches a length of 17 Mill., the gemmate keel is from finely gemmate to nearly smooth in lower whorls, and may approach the specimens mentioned by SMITH in 1904 (l. c.) as var. *minor*, in the upper postnuclear whorls the gemmules are more constant. The nuclear whorls, about 4 in number, are at first smooth, then over a larger or smaller part costulate, with more or less conspicuous traces of a narrow, undulated keel, just above the sutures (this nucleus remembers the section *Gemmula*). The specimens vary slightly in colour, some of them being lighter, I think only in part by being bleached.

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10. Pleurotoma (Hemipleurotoma) violacea Hinds.

HINDS. Voy. "Sulphur", Moll., p. 16, Pl. 5, fig. 8.
REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 186.
WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, p. 30, Pl. 6, fig, 7, 9.
TRYON. Man. of Conch. Vol. VI, p. 169, Pl. 4, fig. 42.
Stat. 33. Bay of Pidjot, Lombok. 22 M. and less. Mud, coral and coralsand. 3 Spec.
Stat. 51. Madura-bay. 69—91 M. Fine grey sand, coarse sand with shells and stones. 5 Spec.
Stat. 58. Seba, Savu. Up to 27 M. Sand. 1 Spec.
Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. 2 Spec.
Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand very fine. 4 Spec.
Stat. 231. Amboina, 54 M. Coralsand. 1 Spec.
Stat. 285. South coast of Timor. 34 M. Limit between mud and coral. Lithothamnion. 1 Spec.

The specimen from Stat. 58 has on the top of the lirae a fine brown line; this specimen is uncommonly well preserved, it may be that the species in all its splendour, will be always marked in the same manner, but that this colour is commonly rubbed off. The specimen from Stat. 95, from the exceptional depth of 522 M. is a young worn shell and may not have lived at this depth.

11. Pleurotoma (Hemipleurotoma) vertebrata Smith.

SMITH. Ann. and Mag. Nat. Hist. Ser. 4, Vol. XV, 1875, p. 416. SMITH. Proc. Zool. Soc. Lond. 1879, p. 186, Pl. 19, fig. 6, 6*a*. TRYON. Man. of Conch. Vol. VI, p. 170; Pl. 3, fig. 29, 29*a* (violacea pars?).

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells, 1 Spec.

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The specimen is small, about 6 Mill.; it probably would be broader, even than SMITH's fig. 6, if adult; the species has been considered by many authors as synonymous with or as a variety of *P. violacea* Hinds, the Siboga-specimen, which has been identified by its author, seems to differ sufficiently from young specimens of *violacea*, being much less slender, even though it appears to be slightly variable in this respect. The sculpture appears also to differ considerably, but the only specimen is too small, to be fit for close comparison.

12. Pleurotoma (Hemipleurotoma) sp.

Stat. 260. Near South point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 1 Spec. This specimen is probably young and certainly too bad for description, it belongs to the same alliance as the two preceding species. 1. P. M. Gemmula Jusca Hombron & Jacquinot.

10 M DN & JACQUINOT, Voy, an pole Sud, Vol. V. p. 111, pl. 25, fig. 19, 20. SMI II. Proc. Zool. Soc. Lond. 1870, p. 186. 11 yox, Man. of Conch. Vol. V1, p. 173, Pl. 4, fig. 53. SMITH. Ann. and Mag. Nat. Hist. Ser. 7, Vol. XIII, 1904, p. 456. 4. Near Djangkar (Java), 9 M. Coarse sand, 3 Spec. 33. Bay of Pidjot, Lombok. 22 M. and less. Mud, coral and coralsand. 1 Spec. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 4 Spec. Stat. 51. Madura-bay, 69-91 M. Fine grey sand, coarse sand with shells and stones, 5 Spec. Stat. 53. Bay of Nangamessi, Sumba, Up to 36 M, Coralsand, 1 spec. Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. 1 Spec. os. 5 43.5 N., 110 40 E. Sulu-archipelago, 522 M. Stony bottom. 2 Spec. Stat. Stat. 105. 6 S N., 121 16 E. Sulu-archipelago. 275 M. Coral botton. 3 Spec. Stat. 114. Kwandang-bay-entrance, 75 M. Hard sand, very fine, 5 Spec. Stat. 110. West of Kwandang-bay-entrance, 72 M. Fine sand with mud. 6 Spec. Stat. 139. 0 11 S., 127 25 E. Near Batjan. 397 M. Mud, stones and coral. 1 Spec. Stat. 150. 6 29.2 S., 136 5.3 E. Near Waigen, 469 M. Coarse sand and broken shells. 1 Spec. Stat. 150. 0 50.1 S., 129°48.8 E. Halmahera-sea. 411 M. 2 Spec. Stat. 164. 1 42.5 S., 130° 47.5 E. Near west New-Guinea. 32 M. 4 Spec. Stat. 174. Waru-bay, north coast of Ceram, 18 M. Mud. 2 Spec. Stat. 213. Saleyer. Up to 36 M. Coralreefs, Mud and mud with sand. I Spec. Stat. 260. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 2 Spec. Stat. 285. South coast of Timor. 34 M. Limit between mud and coral. 5 Spec. Stat. 294. 10 12.2 S., 124° 27'.3 E. Timor-sea 73 M. Soft mud with very fine sand. 1 Spec. Stat. 300. 8 27 S., 122 54.5 E. Savu-sea. 247 M. Sandy mud. 5 Spec.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 3 Spec.

Though the species is rather variable in colour and even slightly in sculpture, none of the specimens agrees sufficiently with P. gemmata Hinds, as described and figured by REEVE, the whorls being by no means so strongly concave between two keels, so I have followed SMITH (l. c.) in naming them P. fusca; the specimen from Stat. 156 is very doubtful, being a worn shell, which agrees however in shape with typical P. fusca, as figured by TRYON. Mr. SMITH, whom I wrote about the question, persists in his opinion, that the two forms are separable and that the true gemmata is Californian. May it be that P. gemmata of many authors is not the same as that of HINDS? Some very young specimens are of course rather doubtful.

14. Pleurotoma Gemmula) monilifera Pease.

PLASE, Proc. Zool. Soc. Lond. 1860, p. 398.

WIINKAULE. Martini-Chemn. Conch. Cab. Ed. 11, Vol. IV, Pleurotoma, p. 73, Pl. 15, fig. 7,9. T. VON. Man. of Conch. Vol. VI, p. 173, Pl. 4, fig. 52 (gemmata pars).

Stat. 33. Bay of Pidjot, Lombok. 22 M. and less. Mud, coral and coralsand. 1 Spec.

Stat. G. Kambaragi-bay, Tanah Djampeah, Up to 32 M. Coral, coralsand. 1 Spec.

Stat. 116. West of Kwandang-bay-entrance, 72 M. Fine sand with mud. 2 Spec.

Stat. 2 4. B-tween islands of Wowoni and Buton, western entrance of Buton-strait. 75-94 M. Sand with dead shells, 2 Spec.

st t. 2 ... Near North point of Nuliu Jaan, Kei-islands, 90 M. Sand, coral and shells, 4 Spec, EM. : I Spec.

Though the specimens vary slightly, they are without doubt separable from the preceding species, many of them are rather juvenile.

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15. Pleurotoma (Gemmula) Kieneri Doumet.

DOUMET. Magasin de Zool. 1840, Pl. 10.
REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 56 (carinata).
WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 15, Pl. 3, fig. 1 (carinata).
TRYON. Man. of Conch. Vol. VI, p. 173, Pl. 4, fig. 49 (carinata).
SMITH. Ann. and Mag. Nat. Hist. Ser. 6, Vol. XVIII, p. 367.
Stat. 51. Madura-bay. 69—91 M. Fine grey sand, coarse sand with shells and stones. 2 Spec.
Stat. 166. 2° 28'.5 S., 131° 3'.3 E. Arafura-sea. 118 M. Hard, coarse sand. 1 Spec.
Stat. 212. 5° 54'.5 S., 120° 19'.2 E. Banda-sea. 462 M. Fine grey and green mud. 2 Spec.
Stat. 260. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 1 Spec.
Stat. 204. 10° 12'.2 S., 124° 27'.3 E. Timor-sea. 73 M. Soft mud with very fine sand. 2 Spec.

Stat. 294. 10° 12'.2 S., 124° 27'.3 E. Timor-sea. 73 M. Soft mud with very fine sand. 2 Spec. Stat. 306. 8° 27' S., 122° 54'.5 E. Savu-sea. 247 M. Sandy mud. 4 Spec.

The specimens from deep water differ slightly from the other ones, those from Stat. 212 have the infrasutural keel less developed, in those from Stat. 306 on the contrary, the sculpture is very strong and especially such specimens with short (broken) canal, remind the next species, these specimens are without the usual brown markings, and though this may largely be due to their being dead shells, it seems that the great depth may account for it, for even in the best preserved specimen, I see no trace of it, except in the infrasutural keel and perhaps in one or two of the interstices of the beaded keel. (Cfr. SMITH. l. c. p. 368).

16. Pleurotoma (Gemmula) congener Smith.

SMITH. Ann. and Mag. Nat. Hist. Ser. 6. Vol. XIV, 1894, p. 160, Pl. 3, fig. 4, 5. — Ann. and Mag. Nat. Hist. Ser. 7. Vol. XIII, 1904, p. 456.

Stat. 5. 7°46' S., 114° 30'.5 E. Bali-sea. 330 M. Mud. 1 Spec. Stat. 139. 0°11' S., 127° 25' E. Near Batjan. 397 M. Mud. stones and coral. 2 Spec.

The specimen from Stat. 5, though the canal seems to be broken, has a length of 62 Mill., the greatest length recorded by SMITH; another from Stat. 139 is even 66 Mill., the second specimen has a swelling on the upper part of columella.

17. Pleurotoma (Gemmula) praesignis Smith.

SMITH. Ann. and Mag. Nat. Hist. Ser. 6, Vol. XVII, 1895, p. 4, Pl. 1, fig. 4. — Ann. and Mag. Nat. Hist. Ser. 7, Vol. XVIII, 1906, p. 161.

Stat. 45. 7° 24' S., 118° 15'.2 E. Flores-sea. 794 M. Grey mud with some radiolariae and diatomes. 2 Spec.

Stat. 159. 0° 59'.1 S., 129° 48'.8 E. Halmahera-sea. 411 M. Coarse sand. 1 Spec.

The specimen from Stat. 159 is very young, the nuclear whorls of another young specimen from Stat. 45, though not quite intact, seems to consist of about 2 smooth, rather

o evex we do and 2 other ones with rather coarse, slightly oblique ribs, which are not crowded and a preal, just above the suture.

18. Pleuretoma Gemmula truncata n. sp. Pl. XXVI, fig. 1.

Stat. 221. 0 24 S., 124 39 E. Banda-sea. 2798 M. Solid bluish grey mud with foraminifera, covered by a 5 cM, thick layer of brown mud. 4 Spec.

Shell shortly fusiform, very thin, whitish under a yellowish epidermis. Upper whorls wanting by erosion, remaining whorls 5, angularly convex, separated by a conspicuous undulated suture; upper part of whorls concave, lower part slightly convex, sculpture consisting of strongly waved ribs, more conspicuous in upper whorls, becoming fainter in last one, where they nearly disappear and have more the character of strong growth-lines below the periphery; on the upper whorls these ribs form tubereles on the fasciole, becoming more foldlike on the lower ones; the whorls are crossed by numerous spirals, forming a subsutural rib, which on upper whorls is more conspicuous and adorned with small beads, corresponding to the upper ends of the ribs, the excavation and fasciole are finely lirate; on the basal half of each whorl, the lirae are coarser, especially on last whorl, where they are irregular, with some intermediate ones. Last whorl strongly contracted below periphery, ending in a short, wide canal, slightly directed to the left. Aperture oval, with a moderately sharp angle above and a very wide but not deep sinus at the periphery; peristome thin; columellar margin with a conspicuous white layer of enamel. Operculum thin, corneous, with basal nucleus.

Alt. 10, lat. 8; apert. alt. 9, lat.  $3^{1/2}$  Mill.

This remarkable species is more or less variable in sculpture, as far as concerns the strength of ribs, tubercles and spirals, but three of them agree in every important particular, in the fourth, a young shell, some characters are obliterated. Though the species may belong to the alliance of *P. pracsignis* Smith and *rotatilis* v. Marts., it is impossible to combine it with any of the described species.

## 19. Pleurotoma (Gemmula) Sibogae n. sp. Pl. XXVI, fig. 2.

Stat. 137. Channel between Makjan and Halmahera. 472 M. Fine dark muddy sand. 1 Spec.

Shell broadly fusiform, with acute, conical spire and strong, angular last whorl, thin, whitish, faintly yellowish on the keel, between the nodules. Whorls 11, but the number may be considerably more, as the upper nuclear whorl seems to be wanting and the shell has the appearance of being not adult. One upper nuclear whorl (or 2) smooth, convex, followed by nearly another whorl, with rather remote ribs; subsequent whorls concave above the keel, with a moderately strong infrasutural keel and 1 or 2 other spirals in the excavation between suture and keel; the infrasutural keel becomes fainter and is scarcely if at all traceable on lower whorls, where on the contrary the number of spirals increases, so that on last whorl of the performent their number amounts to 6 and two very narrow ones just above the keel; this latter is rather narrow, composed of 3 narrow superficial spirals, more conspicuous between the nodules.

perhaps rubbed off on the nodules themselves. Below the keel the last whorl is very convex, but soon contracted and passes into a slender, moderately long canal; the whole lower part of this whorl is lirate, irregularly on body, where 2 lirae are stronger, more regularly on canal; total number of these lirae about 35, but on base of tail too faint to be properly counted; moreover a few narrow intermediate ones below periphery, and the whole shell exhibits very fine growthstriae. The nodules on the keel are rounded, slightly compressed, not very numerous, 24 on last whorl. Aperture triangular with an angle above and at the keel; interior of aperture white, smooth, columellar side enamelled, peristome thin, broken.

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Alt.  $27^{1}/_{2}$ , lat.  $11^{3}/_{4}$ ; apert. alt. with canal  $14^{3}/_{4}$ , lat.  $4^{1}/_{2}$  Mill.

It is not without some hesitation that I describe this new species on a probably incomplete specimen, but as the number of species in the section to which it belongs is not overwhelming, I think it may afterwards be recognizable if adult specimens are captured. Its nearest ally may be *P. carinata* Gray, as defined by SMITH (Ann. and Mag. Nat. Hist., Ser. 6, Vol. XVIII, 1896, p. 368), which should be the same as *P. speciosa* of REEVE, WEINKAUFF and TRVON. It differs by the large number of spirals, of which there are but from 1 to 3 in GRAY's figure, on Plate 23 of his "Mollusca" in the "Animal Kingdom", Vol. XII, though the peristome of that figure seems to indicate a larger number of lirae. In REEVE's figure (Conch. Ic. fig. 9) the number of keels is likewise much smaller, on the contrary the nodules of keel are much more numerous than in the new species, the same is the case with WEINKAUFF's figures (Jahrb. Deutsche Mal. Gesellsch. 1875, pl. 9, fig. 2, and Martini-Chemn. Conch. Cab. Ed. II, Pl. 15, fig. 5).

#### Dolichotoma Bellardi.

#### I. Dolichotoma atractoides Watson.

WATSON. Journ. Linn. Soc. Lond. Vol. XV, 1881, p. 407.
WATSON. Voy. Challenger, Gasterop. p. 301, Pl. 20, fig. 8.
SOWERBY. Proc. Mal. Soc. Lond. Vol. I, 1893, p. 38.
BOETTGER. Nachrichtsbl. Deutsche Mal. Gesellsch. 1895, p. 6.
v. MARTENS. Die beschalten Gastrop. d. deutsch. Tiefsee-Exp. 1898—1899, 1903, p. 86, 87, Pl. 1, fig. 12, 15.
SMITH. Ann. and Mag. Nat. Hist. Ser. 7, Vol. XIII, 1904, p. 459.

Stat. 300. 10° 48'.6 S., 123° 23'.1 E. Timor-sea. 918 M. Fine grey mud. 1 Spec.

The only specimen is very fine and large, its length is 63 Mill., though the nuclear whorls are not intact, its breadth is 29 Mill.; these measurements surpass by far those of WATSON'S specimen (1.4 × 0.53 in.), that of SMITH (47 × 20 Mill.) and of VON MARTENS' var. *aethiopica* (37 × 14 Mill.), the var. *obsolescens* v. Marts. being still larger (67 × 22 Mill.) if the text is correct, the line accompanying the figure is only 57 Mill. and the figure of 72 Mill. has a breadth of 32 Mill. The Siboga-specimen contains the soft parts, however in too much contracted state, to say much about them. I see a thick siphon, strong tentacles, the foot is rounded posteriorly and bears a comparatively small, corneous, thick, oval, concave operculum, with the nucleus at the right side, its length is about  $5^{1}/_{2}$ , its breadth  $3^{1}/_{2}$  Mill.

SIBOGA-EXPEDITIE XLIX<sup>1</sup> C.

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#### Drillia Gray.

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1. Drillia cagapanensis Reeve.

RELVE. Proc. Zool. Soc. Lond. 1846, p. 4.

Conch. Ic. Vol. I, Pleurotoma, fig. 329.

WFINKAUIF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 183, Pl. 36, fig. 3. TRVON. Man. of Conch. Vol. VI, p. 180, Pl. 11, fig. 79.

Stat. 285. Near South coast of Timor. 34 M. Limit between mud and coral. Lithothamnion. 1 Spec.

Towe the identification of this specimen to Mr. SMITH, who pronounces it to be a very fine example of *cagayanensis*; it is much larger than REEVE's specimen, being 25 Mill. in lenght, for though RLIVE's figure has the same length, it is according to text  $1^{1}/_{2}$  times magnified, mereover it is more elongated, the tubercles of the upper part of ribs are less conspicuous, the colour is yellowish-white, with traces of red-brown spots near the aperture, especially one rather large blotch below the suture, at some distance from the sinus. This species belongs to the section *Brachytoma*, often written *Brachystoma*, the first orthography being employed by TRVOX on page 155, the second on page 176 of his Manual; BOETTGER (Nachrichtsbl. d. D. Mal. Gesellsch. 1895, p. 6) says *Brachystoma*, COSSMANN (Essai de Paléoconchologie, part II, pag. 62) *Brachytoma* non *Brachystoma*. A worse evil is that the limits of the sections are so ill-defined, that no two authors agree in referring the species to one section or to another, under such circumstances I thought it better not to quote them at all.

2. Drillia interrupta Lamarek.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 347. KIENER. Coq. Viv. Vol. IV, Pleurotoma, p. 32, Pl. 12, fig. 2. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 51. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 129, Pl. 29, fig. 1, 4. TRYON. Man. of Conch. Vol. VI, p. 181, Pl. 10, fig. 68, 76.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 5 Spec.

This species, according to BOETTGER (l. c., p. 7), should be P. vibicina of HELBLING.

3. Drillia flavidula Lamarck.

LAMARCK, An. s. vert. Ed. II, Vol. IX, p. 346. KIENER, Coq. Viv. Vol. IV, Pleurotoma, p. 30, Pl. 6, fig. 2. REEVE, Conch. Ic. Vol. I, Pleurotoma, fig. 66. WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 45, Pl. 10, fig. 1, 2. TRYON, Man. of Conch. Vol. VI, p. 177, Pl. 10, fig. 56.

Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 1 Spec. Stat. 260. Near north point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 1 Spec.

As both specimens are young, dead shells, not very typical, I need not say that they are rather doubtful.

4. Drillia zonata (Gray) Reeve, var.

REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 74 (type).

Stat. 303. Haingsisi, Samau-island. Up to 36 M. Lithothamnion. 1 Spec.

The only specimen is a young, empty shell, and without Mr. SMITH's assertion, I should not have recognized it as belonging to that species. It is reddish brown, with white upper whorls, light coloured near the base and on the ribs, but I can trace no dark zone, as figured by REEVE. It is too incomplete (young) to give it a varietal name, length only 21 Mill., moreover it is possible that it might have been more typical if adult. It have not quoted the figures of WEINKAUFF or TRYON, that of TRYON being a copy of REEVE's figure, WEINKAUFF's figure agreeing no more with the Siboga-shell; both authors consider this species to be a synonym of *D. flavidula*.

5. Drillia theoreta Melvill.

MELVILL. Ann. and Mag. Nat. Hist. Ser. 7, Vol. IV, 1899, p. 85, Pl. 1, fig. 2.

Stat. 51. Madura-bay, 69—91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec. Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud and hard sand. 1 Spec. Stat. 260. Near North point of Nuhu Jaan. Kei-islands. 90 M. Sand, coral and shells. 2 Spec.

The specimen from Stat. 133 has the normal length of 22 Mill., one specimen from Stat. 260 is very small (about 11 Mill.) the other is young, all the specimens are dead and more or less bleached, but they have the maculations on the ribs.

6. Drillia robusta Hinds.

HINDS. Proc. Zool. Soc. Lond. 1843, p. 39.

REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 204.

WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 184, 215, Pl. 36, fig. 7, Pl. 40, fig. 15.

TRYON. Man. of Conch. Vol. VI, p. 180, Pl. 11, fig. 10.

Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. 2 Spec.

The specimens are less angular than REEVE's figure which has been twice copied by WEINKAUFF.

7. Drillia subangusta n. sp. Pl. XXVI, fig. 3.

Stat. 159. 0° 59'.1 S., 129° 48'.8 E. Halmahera-sea. 411 M. Coarse sand.

Shell narrowly elongate, fusiform, very light yellowish white. Whorls 9, of which about  $1^{1}/_{2}$  form a slightly swollen, smooth nucleus, subsequent whorls convex, separated by an undulated suture, which is accompanied by a spiral rib, conspicuous on upper whorls, becoming fainter lower on, nearly disappearing towards last whorl, upper part of whorls with a rather narrow excavation, wider but shallower on lower whorls, excavation sculptured with waved concentric striae

and very fine spiral striae, lower part of whorls with strong rounded ribs, 10 or. last whorl, crossed by from 3 to 4 spiral lirae on lower whorls, 10 on last one, of which the upper 6 are more remote, the lower ones on base and canal crowded, on the ribs the upper lirae are beadlike, then the ribs disappear. Aperture narrowly elongated, peristome broken, upper sinus probably wide, columellar margin slightly concave above, with a tubercle at sinus, straight below, canal wide, slightly upturned, interior of aperture white.

Alt. 15, lat. about  $4^{1}/_{2}$ ; apert. alt.  $5^{1}/_{2}$ , lat. about 2 Mill.

Though this specimen is not quite complete, its shape is too peculiar to neglect it. Mr. SMITH who compared it for me, says it is allied to but different from *angusta* SMITH (Ann. Mag. Nat. Hist. Ser. 4, Vol. XIX, 1877, p. 495); that species is still narrower, has a considerably larger number of ribs on last whorl (15) and has 5 or 6 spiral grooves on upper whorls, with 5 or 6 aodules on ribs, (only 2 or 3 in the new species).

8. Drillia laterculata Sowerby, var.

SOWERBY, Proc. Zool. Soc. Lond. 1870, p. 253. SMITH, Moll. Zool. Coll., "Alert" 1884, p. 38, Pl. 4, fig. E. E 1.

Stat. 162. Between Loslos and Buton-islands, West of Salawatti. 18 M. Coarse and fine sand with clay and shells. 1 Spec.

The specimen is smaller (16 Mill.) but otherwise agrees rather well with figure  $E_{1}$  of SMITH and with his description of the variety.

9. Drillia incerta Smith.

SMITH. Ann. and Mag. Nat. Hist. Ser. 4, Vol. XIX, 1877, p. 496.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec.

This specimen, also identified by Mr. SMTH, is smaller (19 Mill. instead of 25) probably not full-grown, with the lirations less numerous, as it is moreover bleached, (though light yellowishbrown) and not quite typical, it is unfortunately not fit for figuring this still unfigured species.

10. Drillia rubidofusca n. sp. Pl. XXVI, fig. 4.

Stat. 240. Banda. 9-45 M. Black sand, coral, Lithothamnion. 1 Spec.

Shell fusiform, rather solid, uniformly red-brown, lighther behind peristome and at the sutural sinus, and with orange base. Whorls 6, (apex broken; the number of whorls may have been at least 10) rather convex, slightly excavated below the conspicuous suture, which is accompanied by an inconspicuous infrasutural thread. Sculpture consisting of somewhat oblique ribs, nearly crossing the entire whorl in the upper ones, but becoming obsolete in the infrasutural depression of lower whorls, about 15 ribs on last whorl, of which the ventral ones are obsolete, that behind the peristome very strong, varix-like, moreover the shell is covered with fine growth-striae and very fine spiral striae, only visible under a lens, 6 spiral lirae cross the ribs, in most cases with intermediate, much finer lirae and 3 to 4 very faint ones in the excavation;

on the last whorl the number of principal lirae amounts to 20. Aperture oblong, narrow, with thin peristome, protracted about the middle, with a deep, rather wide sinus above (fig. 1,) columellar side with a thick layer of enamel, with a flat, whitish tubercle above at the sinus, straight below, peristome margined with red-brown interiorly, with a light violet layer of

enamel behind, in the depth again red-brown, upper part of columellar layer redbrown. Canal slightly upturned.

Alt. 18 (may have been 20), lat.  $6^{1}/_{4}$ ; apert. alt. from upper part of sinus to base of canal  $8^{1}/_{2}$ , lat.  $2^{1}/_{3}$  Mill.

Though this only specimen is incomplete, it seems to deserve description. It has some superficial resemblance with *Pleurotoma (Drillia) castanea* REEVE, by its shape and colour, but it differs in sculpture, is less angular, *D. castanea* being according to description smooth, with fine grooves at the base, WEINKAUFF's description and figure of that species (Conch. Cab. Pleurotoma, p. 102, Pl. 22, fig. 46) scarcely agree with those of REEVE, as his shell is "spiraliter liratula", which should better agree with the Siboga-specimen. I can scarcely believe that the differences could depend on age, as WEINKAUFF suggests, at least the upper



Fig. 1. Drillia rubidofusca n. sp.

whorls in my specimen are likewise lirate, WEINKAUFF's figure represents a much broader angular shell, more strombiform.

11. Drillia pagodaeformis n. sp. Pl. XXVI, fig. 5.

Stat. 159. 0° 59'.1 S., 129° 28'.8 E. Halmahera-sea. 411 M. 1 Spec. Stat. 256. 5° 26'.6 S., 132° 32'.5 E. Near Kei-islands. 397 M. Greyish green mud. 2 Spec.

Shell elongately fusiform, moderately solid, light yellowish-brown, lighter on the canal. Whorls about 11, of which about  $1^{1/2}$  form a smooth, inflated, laterally-inclined nucleus. Postnuclear whorls angular, very convex, separated by a linear, undulated suture, accompanied by a faint infrasutural rib, more conspicuous on upper whorls; upper part of whorls conspicuously excavated, lower part with strong, short, nodulous, oblique ribs, abruptly ending at the excavation, scarcely reaching the basal suture in lower whorls. There are 3 faint, raised, spiral lirae in the excavation, crossed by elegantly curved, partly riblike striae, 4 to 5 stronger lirae crossing the ribs, with a few faint striae above them on the limit between ribs and excavation in lower whorls; on the penultimate whorl, another liration appears at some distance above the snture, amounting to 3 rather remote, strong lirae on last whorl, and a large number (about 20) on basal part of last whorl and canal; body-whorl strongly attenuated below, ending in a long, slightly curved canal. Aperture ovate, probably with a rather wide, deep sinus (the peristome is broken), columellar margin concave above, strongly contorted below, with a thin layer of enamel.

Alt.  $28^3/_4$ , lat. 8; apert. alt.  $12^1/_2$ , lat. about  $3^1/_2$  Mill.

The specimen from Stat. 159 has the lirae in the excavation somewhat more apparent, which may be due to its being a dead, calcified shell; one of the specimens from Stat. 256 is young and very bad, that which has served for description, though incomplete, seemed to be remarkable enough to deserve a name, for though broken, it is a rather fresh shell, the great

depth may be the true one, as the depth of the two localities does not differ considerably. This species is remarkable for its pagodaeform shape, caused by the great contrast between the upper and lower part of whorls.

12. Drillia varicosa Reeve.

REEVE, Proc. Zool. Soc. Lond. 1843, p. 187.
Conch. Ic. Vol. I, Pleurotoma, fig. 141.
WEINKAUFF, Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 85, Pl. 18, fig. 6, 11.
TRYON, Man. of Conch. Vol. VI, p. 205, Pl. 12, fig. 17.

Stat. 123. North-bay, Biaru-island. 36–27 M. Stone and Lithothamnion-bottom. 1 Spec. Stat. 133. Lirung, Salibabu-island. Up to 36 M. Mud and hard sand. 1 Spec. Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 2 Spec.

The specimens are not quite adult, those from Stat. 123 and 133 are moreover bleached, however they agree with the upper whorls of more complete specimens.

#### 13. Drillia sinensis Hinds.

IllNDS, Proc. Zool. Soc. Lond. 1843, p. 38. REEVE, Conch. Ic. Vol. I, Pleurotoma, fig. 153. WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 77, Pl. 16, fig. 5. TRYON, Man. of Conch. Vol. VI, p. 201, Pl. 11, fig. 84.

Stat. 2. Madura-strait. 56 M. Grey mud with some radiolariae. I Spec.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand; coarse sand with shells and stones. 2 Spec.

Stat. 71. Makassar and surroundings. Up to 32 M: Mud, sand with mud, coral. 1 Spec.

Stat. 77. Borneo-bank. 59 M. Fine grey coralsand. I Spec.

- Stat. 153. 0° 3'.8 N., 130° 24'.3 E. Bougainville-strait. 14 M. Fine and coarse sand with dead shells. 1 Spec.
- Stat. 162. Between Loslos and Broken-islands. West of Salawatti. 18 M. Coarse and fine sand with clay and shells. 1 Spec.
- Stat. 205. Lohio-bay, Buton-strait. 22 M. Sandy mud. 1 Spec.
- Stat. 260. Near North point of Nuhu Jaan. 90 M. Sand, coral and shells. I Spec.
- Stat. 285. South coast of Timor. 34 M. Limit between mud and coral. 3 Spec.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 3 Spec.

Varying in colour from yellowish to more dark red-brown, but quite agreeing in sculpture, the specimen from Stat. 162 is a very fine colour-variety, with a white zone at the angle. below the periphery of last whorl and a narrower one on the canal. The quoted figures are not very satisfactory, still less so the synonymy given by TRYON, who throws together even very different forms. The specimens from Stat. 2 and 153 are young and dead and could only be identified with moderate certainly by comparison with the upper whorls of adult ones.

1.4. Drillia Acsopus n. sp. Pl. XXVI, fig. 6.

Stat. 114. Kwandang-bay-entrance, 75 M. Hard sand, very fine, 1 Spec.

Stat. 116. West of Kwandang-bay-entrance. 72 M. Fine sand with mud. 3 Spec.

Shell fusiform, with long, acute spire, yellowish-brown, alternating with red-brown. Whorls

13 or 14, of which at least 2 (uppermost whorl broken) form a smooth nucleus, with scarcely convex whorls, probably about half a whorl with only a few smooth ribs must still be reckoned to the nucleus. Remaining whorls with a rather strong, nodulous, bilirate, infrasutural rib, red-brown in the interstices of nodules, below this is a rather narrow excavated space, with 5 spiral threads and faint, descending, red-brown flammules, corresponding to the interstices of the subsutural nodules, lower part of whorls with slightly oblique, rather numerous ribs, 17 in number on penultimate whorl; the ribbed zone is convex, angular above, crossed by 4, on lower whorls by 5 rather flat, stronger, spiral lirae and between these 2 fainter spirals, the shell has moreover rather strong growth-lines, making the interstices between the ribs granular, these interstices are more or less red-brown; on last whorl, which is contracted below and ends in a rather short, recurved canal, the ribs become fainter below periphery; near and on the canal the darker colour reappears in a fainter way; the last whorl is humpbacked by a strong, oblique varix, even continued in a fainter manner on the canal, this last whorl with canal is crossed by about 20 principal lirae. Aperture oblong, with a rather deep sinus above, narrower at its entrance than behind, where it is regularly rounded; peristome rather thin, with a large sinus near the limit of last whorl and canal, columellar margin tubercled above, then slightly concave, running nearly straight in the narrow, slightly contorted and upturned canal, it is strongly enamelled, especially below, where it leaves a conspicuous umbilical slit. Interior of aperture white.

Alt. 32, lat.  $9^{3}/_{4}$ ; apert. alt. 12, lat.  $3^{1}/_{2}$  Mill.

This species has some resemblance with the preceding ones, but may be easily distinguished by its sculpture, especially by the single, strong varix on the back, the numerous ribs and by its colour, most of the specimens are smaller, probably young.

## 15. Drillia rubrozonata n. sp. Pl. XXVI, fig. 7.

Stat. 51. Madura-bay. 69—91 M. Fine grey sand, coarse sand with shells and stones. I Spec. Stat. 285. South coast of Timor. 34 M. Limit between mud and coral. 2 Spec.

Shell small, rather broadly fusiform, with moderately long spire, subpellucid, whitish, painted with purplish red-brown. Whorls 9, of which about 3 form a smooth nucleus, with slightly convex sides and 3 or 4 ribs at the end of last nuclear whorl. Postnuclear whorls convex, separated by an undulated suture, with rather thick, rounded ribs, 9 or 10 in number on penultimate whorl; these ribs occupy the whole space of the upper whorls, they are slightly angular below a narrow infrasutural excavation, especially on last whorl and become less distinct on base of last whorl, where they disappear at last on the canal. Of the spirals firstly a strong one, with oblong nodules corresponding to the ribs, border the suture, it is accompanied by a much finer one in the excavation, 3 rather strong spirals cross the lower part of each whorl, and amount to about 17 on last whorl and canal, with eventually a narrow intermediate one in the interstices of the ribs somewhat granular. The red-brown colour appears in the interstices of the nodules of subsutural rib, and between the ribs in the excavation, forming on lower part of last whorl, the base of canal is of the same colour, which in some instances occupies nearly

the whole space between two ribs. Aperture oval, with a broad, rather shallow sinus at the suture and a very shallow one near the limit of canal, peristome thin, columellar side with a callosity at the suture, then slightly concave, running nearly straight in the rather short, wide canal, interior of aperture light violet, with the brown bands of the exterior more or less visible, also on the columellar side, which is rather strongly enamelled.

Alt. 12, lat. 4; apert. alt.  $4^3/_{12}$ , lat.  $1^1/_{2}$  Mill.

This species has somewhat the appearance of being a miniature of the preceding one but it is much smaller, has a smaller number of ribs and of lirae, and no trace of the gibbous rib on the back, for though one of the ribs, at some distance from the aperture is somewhat stronger than the other ones, it has by no means that prominent character as in D. Accopus. The specimen from Stat. 51 is not adult, one specimen from Stat. 285 is very young.

16. Drillia rufolineata n. sp. Pl. XXVI, fig. 8.

Stat. 105. 6°8 N., 121° 19 E. Sulu-archipelago. 275 M. Coral-bottom. 1 Spec.

Shell broadly fusiform, strong, yellowish, painted and spirally lineated with red-brown. Whorls 9, of which about 2 form a smooth nucleus, post-nuclear whorls convex, with an undulated suture, accompanied by a subsutural rib or keel, below this a slight excavation. Sculpture consisting of strong rounded ribs, crossing, though less distinctly, the excavation, 10 in number on last whorl, where they nearly reach the base; one rib at some distance from the peristome, just behind the upper sinus, especially strong and varix-like. The brown colour consists of a faint tinge in the excavation, a similar zone below the periphery, much more conspicuous between the ribs, the principal lirae being nearly without exception red-brown, especially 4 of them on last whorl. Spirals from 3 to 7 on upper whorls and numerous ones on last whorl and canal, which cannot be divided in principal and secondary ones, the excavation is finely spirally striated, moreover very fine growth-lirae are visible in many parts, if seen with a strong lens. Aperture elongately oval, with a broad, moderately deep sinus below the suture, peristome rather thin, with a very shallow sinus near the canal, which is short and broad; columellar margin tubercled above, then slightly concave, then straight and slightly directed to the left at the canal, strongly enamelled in its whole length. Interior of aperture light purplish, nearly white near the peristome.

Alt.  $16^{1}/_{27}$  lat.  $5^{3}/_{17}$ ; apert. alt. 7, lat. 2 Mill.

This species, which belongs to the alliance of the preceding ones, may be distinguished by its convexly rounded whorls, which have scarcely a tendency to be angular below the excavation and by its fine red-brown lirae on a more or less clear, yellowish ground.

17. Drillia intertincta Smith.

SMITH, Ann. and Mag. Nat. Hist. Ser. 4. Vol. XIX, 1877, p. 497.

WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 104, Pl. 22, fig. 8.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 1 Spec.
Stat. 164. 1 42'.5 S., 130° 47'.5 E. Near West New-Guinea. 32 M. Sand, small stones and shells.
2 Spec.

Stat. 313. East of Dangar Besar, Saleh-bay. Up to 36 M. Sand, coral and mud. 1 Spec.

This species seems to be somewhat variable in sculpture and colour, the spiral lirae of penultimate whorl, vary in number from 3 to 5; in the specimens from Stat. 164, not only the infrasutural keel is adorned with red-brown dots, but also the principal lirae on many places. As TRYON, who has probably not known the species, enumerates it amongst his synonyms of D. sincnsis and gives only a rude copy of WEINKAUFF's rather rude figure, I have not quoted that author.

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18. Drillia sterrha Watson.

WATSON. Prelim. Report, Challenger Moll. Journ. Linn. Soc. Lond. Vol. XV, 1881, p. 426. ---- Report of the Challenger-Gastrop. p. 305, Pl. 21, fig. 3.

Stat. 162. Between Loslos and Broken-islands. West of Salawatti. 18 M. Coarse and fine sand with clay and shells. 1 Spec.

Stat. 164. 1°42'.5 S., 130°47'.5 E. Near West New-Guinea. 32 M. Sand, small stones and shells. 3 Spec.

The upper part of the ribs below the excavation, seems to be a little more angular than in WATSON'S figure, and the number of ribs on last whorl of the largest specimen is 14, otherwise I find no differences of any importance.

19. Drillia regia (Beck) Reeve.

REEVE. Conch. Syst. Vol. II, p. 187, Pl. 233, fig. 7. — Conch. Ic. Vol. I, Pleurotoma, fig. 75. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 75, Pl. 16, fig. 1, 3. TRYON. Man. of Conch. Vol. VI, p. 201, Pl. 11, fig. 80.

Stat. 66. Bank between Bahuluwang and Tambolungan, South of Saleyer. 8—10 M. Dead coral, Halimeda, Lithothamnion. 1 Spec.

Stat. 315. East of Sailus Besar, Paternoster-islands. Up to 36 M. Coral and Lithothamnion. I Spec.

BECK's name was only a manuscript-name, so I have quoted REEVE as the author. The sculpture is sharper than in REEVE's figure, more like that of WEINKAUFF. After receiving specimens of *D. Rougeyroni* Souv. (Journ. de Conch., 1874, p. 187, Pl. 7, fig. 1), I scarcely can find differences of much importance, which could not be ascribed in part to the state of preservation of the specimens. SouverBIE's much more detailed description is very well applicable to the Siboga-specimens. If the two species ought to be united, the name affixed by REEVE should have priority. Mr. LE BOCKTON TOMLIN (Journ. of Conch. Vol. XIII, 1910, p. 43) thinks the two are different.

20. Drillia radula Hinds.

HINDS. Proc. Zool. Soc. Lond. 1834, p. 16. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 223. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 90, Pl. 19, fig. 4, 6. TRYON. Man. of Conch. Vol. VI, p. 241, Pl. 7, fig. 89.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec. Stat. 104. Sulu harbour, Sulu-island. 14 M. Sand. 1 Spec.

SIBOGA-EXPEDITIE XLIX<sup>1</sup>C.

Stat. 1.5. 6 8 N., 121 19 E. Sulu-archipelago, 275 M. Coralbottom, 1 Spec.

Stat. 110. West of Kwandang-bay-entrance, 72 M. Fine sand with mud. 1 Spec.

Stat. 162. Between Loslos and Broken-islands. West of Salawatti. 18 M. Coarse and fine sand with clay and shells. 1 Spec.

Stat. 164. 1 42.5 S., 130 47.5 E. Near West New-Guinea. 32 M. Sand, small stones and shells. 2 Spec.

Stat. 200. Near North point of Nuhu Jaan, Kei-islands, 90 M. Saud, coral and shells, 1 Spec.

The specimens slightly vary in sculpture, much more in colour, some specimens are nearly or quite white, however I think this may be due to bleaching, as they are dead shells. I have located the species in *Drillia* instead of *Surcula*, though not without hesitation and after I have seen that HEDLEY (Proc. Austral. Assoc. adv. sc. 1909, p. 365) has done the same. Unfortunately I cannot see that any of the specimens contain the soft parts.

21. Drillia audax Melvill & Standen.

MELVILL & STANDEN. Ann. Mag. Nat. Hist. Scr. 7, Vol. XII, 1903, p. 313, Pl. 23, fig. 1. Stat. 306. 8° 27' S., 122° 54'.5 E. Savu-sea. 247 M. Sandy mud. 2 Spec.

The sculpture of the Siboga-specimens is coarser than that of a specimen from the Gulf of Oman presented to me by Mr. MELVILL, especially on last whorl, but otherwise I see no differences of any importance. These differences in sculpture may be partly due to variability, the localities being very remote, partly be caused by the Siboga-specimens being dead, which renders sculpture more conspicuous, as long as the shells are not worn.

22. Drillia kwandangensis n. sp. Pl. XXVI, fig. 9.

Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand, very fine. 1 Spec.

Shell elongately fusiform, strong, rather dark reddish-brown. Whorls 8, of which 3 form a smooth, red-brown nucleus: post-nuclear whorls slightly convex, strongly lirate below the suture, with at first 2, lower on 3 strong spiral lirate on each whorl, 14 in number on last whorl and 2 faint ones below subsutural liration, more or less visible on upper whorls; the whorls are crossed by thick, rounded ribs, making the lirate slightly beaded, 9 in number on penultimate whorl, faint on last one, which has a very strong rib behind peristome, moreover the shell is crossed by conspicuous growth-lines. Aperture oblong, angular above, peristome rather thin, with a conspicuous sinus above, then protracted towards the middle, columellar margin concave above, straight below, with a strong layer of enamel, a tubercle above at the sinus: interior of aperture smooth, red-brown with a bluish tint in its depth. Canal straight, rather narrow.

Alt.  $8^{1}/_{2}$ , lat. 3; apert. alt. 3, lat. 1 Mill.

Allied to the preceding species, but differing by its much coarser sculpture, which is still considerably stronger than in the specimens of *audax*, recorded above, and by its uniform red brown colour.

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23. Drillia timorensis n. sp. Pl. XXVI, fig. 10.

Stat. 285. Near south coast of Timor. 34 M. Limit between mud and coral. Lithothamnion. 1 Spec. Shell elongately fusiform, strong, reddish-brown. Whorls 7, of which about 1<sup>1</sup>/<sub>2</sub> form a smooth nucleus: post-nuclear whorls moderately convex, with a strong liration below the suture and from 3 to 4 lirae on their lower part, 11 on last whorl, moreover the shell is covered with fine spiral striae and growth-lines, and is crossed by thick, rounded, oblique ribs, 12 in number on penultimate whorl, which give the shell an elegantly beaded appearance, last rib before peristome very thick. Aperture elongately oval, peristome thick, with a rather shallow sinus above, protracted lower on. Columellar margin concave above, rather straight below, with a strong layer of enamel, interior of aperture as in preceding species, but less bluish. Canal straight, rather narrow.

Alt.  $S^{1}/_{2}$ , lat.  $2^{4}/_{5}$ ; apert. alt.  $3^{1}/_{4}$ , lat. I Mill.

Still nearly allied to the preceding species, from which it differs by a smaller number of spiral lirae, the fine spiral striae and a larger number of ribs. Though it may be possible, that if more specimens could be compared, these differences would prove to have only varietal rank, the spiral striation induced me to keep them provisionally separate. I find no trace of it in the preceding form.

24. Drillia batjanensis n. sp. Pl. XXVII, fig. 1.

Stat. 139. 0° 11' S., 127° 25' E. Near Batjan. 397 M. Mud, stones and coral. 1 Spec.

Shell fusiform, strong, whitish. Whorls 6, of which 3 form a large, convexly-whorled, smooth and shining nucleus. Post-nuclear whorls moderately convex, slightly concave below a strong, yellowish, subsutural spiral. Sculpture consisting of this spiral and some other ones, 7 in number on penultimate, 22 and a few intermediate ones on last whorl, stronger on lower part of upper whorls and on median part of last one; the spirals are crossed by conspicuous growth-striae, stronger in the interstices, which are broader near the base. Aperture oval, angular above, peristome strong, with a rather wide, deep sinus above, protracted lower on, bordered exteriorly by a strong, rounded rib; columellar margin slightly concave above, nearly straight below, with a strong layer of enamel, forming a wall at its upper extremity, bordering the sinus; canal rather wide, slightly directed to the left, interior of aperture smooth, white.

Alt.  $7^{1}/_{2}$ , lat.  $3^{1}/_{4}$ ; apert. alt.  $3^{1}/_{2}$ , lat. I Mill.

This species, which with the 3 preceding ones forms a somewhat peculiar group, has some resemblance with *D. circumvertens* Melv. & St. (Proc. Zool. Soc. Lond. 1901, p. 436, Pl. 23, fig. 23), but a close comparison with the description and figure, gives the following differences; that species has 8 whorls, a much smaller nucleus of but 2 whorls, it is keeled, which cannot be said of the new species, which has the lirae more regular, on the base the lirae in *D. circumvertens* are much more close, the total number of lirae however is larger.

25. Drillia Sibogae n. sp. Pl. XXVII, fig. 2.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. 2 Spec. Stat. 260. Near North point of Nuhu Jaan. Kei-islands. 90 M. Sand, coral and shells. 1 Spec.

Shell broadly pyramidal, with short canal, yellowish-white, stained with brown and with a few waved, white streaks. Whorls 9, of which about 2 form a smooth, convexly-whorled, brown tinged nucleus. Subsequent whorls slightly contracted above, not very convex below, separated by a conspicuous, slightly waved suture; sculpture consisting in the excavation of a strong liration, single in upper whorls, divided lower on by a groove, and correspondingly adorned Ly a single or double row of beads, below this, 2 narrow lirae run still in the excavation; lower part of whorls with a larger number of lirae, 6 in penultimate whorl, about 25 in last whorl, inclusive of canal, with more or less conspicuous intermediate ones in many interstices. These lirae are crossed by oblique, on lower whorls by waved ribs, more conspicuous and remote on upper whorls, closer and fainter on last one, producing beads where they are intercrossing, the last whorl having the appearance of being more or less regularly beaded all over. The brown colour is very irregularly divided, on the infrasutural band it is nearly continuous but on the body-whorl darker brown beads alternate with lighter or even white ones. Last whorl rather convex, attenuated below, ending in a short, rather broad canal. Aperture oval, with a wide sinus above, peristome thin, regularly arcuate, columellar margin concave, running in the canal, which is wide and slightly directed to the left; interior of aperture bluish white, columella with a thin layer of white enamel.

Alt. 15, lat. 6; apert. alt.  $6^{1}/_{2}$ , lat.  $2^{1}/_{3}$  Mill.

I know no species which is nearly allied to this one, in sculpture it resembles somewhat *D. digitalis* Reeve, but not at all in shape or colour.

### 26. Drillia Dunkeri Weinkauff.

WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 75, Pl. 16, fig. 2. TRYON. Man. of Conch. Vol. VI, p. 179, Pl. 8, fig. 24 (*umbilicata* jun.).

Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. 1 Spec.

The Siboga-specimen is larger than WEINKAUFF'S one, (38 instead of 31 Mill. in length), but otherwise it agrees as well as can be desired, with his description and figure; WEINKAUFF did not know its locality. TRYON says (l. c.) it is an immature *D. umbilicata* Gray, the quoted localities are "Sierra Leone (GRAY); West-Indies (SWIFT)"; the Siboga-specimen has not at all a juvenile appearance and this circumstance, connected with the remote locality, may plead for my opinion that the two species may stand. As I have seen no other specimens, I cannot insist on the other important differences in shape and particulars of aperture, between the existing figures.

27. Drillia dejecta Smith.

SMITH. Ann. Mag. Nat. Hist. Ser. 6, Vol. II, 1888, p. 306.

Stat. 260. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells, 1 Spec. Stat. 285. South coast of Timor. 34 M. Limit between mud and coral. Lithothamnion. 7 Spec.

The Siboga-specimens vary a little in size, but they all agree in sculpture.

28. Drillia interpunctata Smith.

SMITH. Ann. Mag. Nat. Hist. Ser. 5, Vol. X, 1882, p. 207.

Stat. 60. Haingsisi, Samau-island, Timor. Shore. 1 Spec. Stat. 95. 5°43'.5 N., 119°40' E. Sulu-archipelago. 522 M. Stony bottom. 1 Spec.

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The specimens are young, somewhat bleached shells, one of them with only traces of the brown colour. Mr. SMITH, to whom I owe the identification, writes about it: "I cannot separate this from the young of *interpunctata* Sm., said to be from St. Thomas. St. Th. may be wrong. It is a Cumingian locality". The specimen from Stat. 95 probably has not lived at a depth of 522 M.

29. Drillia opalus Reeve.

REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 274. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 209, Pi. 40, fig. 1. TRYON. Man. of Conch. Vol. VI, p. 253, Pl. 20, fig. 5.

Stat. 169. Near Atjatuning, West coast of New-Guinea. 57 M. Mud. 1 Spec. Stat. 294. 10° 12'.2 S., 124° 27'.3 E. Timor-Sea. 73 M. Soft mud with very fine sand. 1 Spec.

TRYON places this species in *Mangilia*, its nuclear whorls agree with those of allied species of *Drillia*, being smooth and convex.

30. Drillia auriculifera Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 345. KIENER. Coq. Viv. Vol. IV, Pleurotoma, p. 51, Pl. 2, fig. 2. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 69. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 54, Pl. 12, fig. 2. TRYON. Man. of Conch. Vol. VI, p. 185, Pl. 8, fig. 25.

Stat. 37. Sailus ketjil, Paternoster-islands. 27 M. and less. Coral and coralsand. 3 Spec. Stat. 282. Between Nusa Besi and N.E.-point of Timor. 27-54. M. Sand, coral and Lithothamnion. I Spec.

The specimens from Stat. 37 are young, quite white, but otherwise typical, that from Stat. 282 has lost the scales or they are not developed.

31. Drillia unizonalis Lamarck.

LAMARCK. An. s. vert. Ed. II, Vol. IX, p. 347. KIENER. Coq. Viv. Vol. IV, Pleurotoma, p. 54, Pl. 22, fig. 2. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 113. WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 62, Pl. 13, fig. 5, 6. TRYON. Man. of Conch. Vol. VI, p. 185, Pl. 9, fig. 38.

Stat. 125. Near Sawan, Siau-island. Reef. I Spec.

The specimen is quite typical.

32 Dr. In olliquicostata Reeve.

RITVI, Proc. Zool. Soc. Lond. 1845, p. 110.
Conch. Ic. Vol. I, Pleurotoma, fig. 168.
WITNKAUFT, Martini-Chemn. Conch. Cab. Ed. H. Vol. IV, Pleurotoma, p. 214, Pl. 40, fig. 13.
TRVON, Man. of Conch. Vol. VI, p. 204, Pl. 12, fig. 12.

Stat 104. Sulu-harbour, Sulu-island, 14 M. Sand, 1 Spec. Stat. 258. Tu.d., Kei-islands, 22 M. Lithothamnion, sand and coral. 1 Spec.

Of this species, the locality of which was not known to the quoted authors, I have recorded subfossil specimens from Celebes.

33. Drillia gibberula Hervier.

HERVIER. Journ. d. Conch. 1895, p. 143. Journ. d. Conch. 1896, p. 57, Pl. 1, fig. 5.

Stat. 109. Near Pulu Tongkil, Sulu-archipelago. 13 M. Lithothamnion-bottom. 1 Spec.

The specimen is less whitish near the sinus, but otherwise agrees in every respect with the description and with specimens from Lifu.

## 34. Drillia nitens Hinds.

HINDS, Proc. Zool. Soc. Lond. 1843, p. 41. REEVE, Conch. Ic. Vol. I, Pleurotoma, fig. 189. WEINKAUFF, Martini-Chemn, Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 183, Pl. 36, fig. 5. TRYON, Man. of Conch. Vol. VI, p. 253, Pl. 20, fig. 2.

Stat. 2. Madura-strait. 56 M. Grey mud with some radiolariae. 1 Spec. Stat. 66. Kambaragi-bay, Tanah Djampeah. Up to 32 M. Coral, coralsand. 2 Spec. Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand, very fine. 1 Spec.

Without Mr. SMITH's assistance I should not have identified the specimens, as the quoted figures seem to be not characteristic, those of WEINKAUFF and TRVON are more or less accurate copies of RLEVL's figure. The ribs are not so strongly angular as figured by REEVE, I see no whitish band. The species appears to be rather variable in number of ribs and in their being more or less rounded. TRVON locates the species in *Mangilia*.

35. Drillia suluensis n. sp. Pl. XXVII, fig. 3.

Stat. 95. 5 43'.5 N., 119 40 E. Sulu-archipelago. 522 M. Stony bottom. 2 Spec.

Shell shortly fusiform, smooth, shining, white. Whorls 6 to 7, of which about 2 form smooth, convexly-whorled nucleus, subsequent whorls slightly convex, with a narrow depression below the simple suture, lower part with rather strong, rounded ribs from suture to suture, al out 10 on penultimate whorl, fainter in the excavation, which latter as well as the ribs disappear on last whorl, with the exception of a strong rib behind the peristome, this latter whorl is more ver slightly compressed, with a trace of a second rib or indistinct varix on the left side of whorl, which is contracted below, with a few indistinct spiral lirae near base; the whole shell is covered with very fine growth-striae. Aperture short, oval, with a broad, rather deep, rounded sinus at the suture, narrower by a strong columellar tubercle; peristome thin, though strongly ribbed exteriorly, columellar margin concave, strongly enamelled, base of aperture ending in a short, wide canal.

Alt. 8, lat. 3; apert. alt. 3, lat. 1 Mill.

This species has been pronounced by Mr. SMITH to be allied to but different from *D. disjecta* Smith (Ann. Mag. Nat. Hist., Ser. 6, Vol. II, 1888, p. 308). That species is according to description more slender, with 10 ribs on last whorl, but not costate behind peristome, moreover it is tinged with brown between the ribs and at the canal, whereas the last whorl of the new species is smooth, but for a conspicuous rib behind peristome and if quite fresh, it might have been brown behind that rib, at least I find a very faint trace (perhaps bleached) of a brownish colour.

36. Drillia madurensis n. sp. Pl. XXVII, fig. 4.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. I Spec.

Shell shortly fusiform, rather smooth, light buff, with a few red-brown spots below the suture of lower whorls and one faint band on those whorls and 3 on last whorl, the canal being tinted with the same colour. Whorls 9, of which 2 upper ones form a smooth, convexly-whorled nucleus. Subsequent whorls convex, 4 or 5 post-nuclear ones slightly angular below, lower ones becoming more regularly convex. Sculpture consisting of numerous, rather narrow, axial ribs, about 20 stronger and weaker ones on last whorl, that behind the peristome very strong and varix-like; these ribs run from one suture to the other on upper whorls, but are faint towards the base of last whorl, and disappear on the canal, which is spirally lirate; upper part of whorls very faintly spirally striated. Aperture ovate, with an angle above, but scarcely with a sinus, peristome thin, slightly curved, columellar margin tubercled above, then regularly concave and conspicuously enamelled; aperture ending in a short, wide canal. Interior of aperture with a white layer of enamel near peristome and 3 brown blotches at its margin, corresponding to the external bands.

Alt. 14, lat.  $10^{1}/_{2}$ ; apert. alt. 5, lat. 2 Mill.

I find no species which is nearly allied, it is remarkable for its numerous ribs and colour.

## 37. Drillia (Conopleura) striata Hinds.

HINDS. Voy. Sulphur, Moll. p. 24, Pl. 7, fig. 22, 23. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 330 (*partita*). WEINKAUFF. Martini-Chemn. Conch. Cab. Ed. II, Vol. IV, Pleurotoma, p. 127, Pl. 28, fig. 5, 8. TRYON. Man. of Conch. Vol. VI, p. 211, Pl. 8, fig. 6, 7.

Stat. 285. Near south coast of Timor. 34 M. Limit between mud and coral. Lithothamnion. I Spec.

The specimen of this very peculiar and characteristic species is of an exquisite beauty. I can scarcely conceive how most authors consider it to have only sectional rank.

#### Borsonia Bellardi.

1 Borsonia Smithi n. sp. Pl. XXVII, fig. 5.

Stat. 52, 9° 3.4 S., 119 50.7. E. Savu-sea, 659 M. Globigerine ooze, 1 Spec.

Shell fusiform, rather thick, yellowish-white. Upper whorls lost by crosion, remaining whorls 6, upper ones still eroded, of the 4 whorls which are in sufficient state of preservation, the upper 2 are slightly angular, their upper part a little excavated, the lower part more convex, with a single row of nodules on the limit; in the lower ones the shell is slightly excavated below the suture, but otherwise regularly rounded, without nodules; sculpture consisting of numerous arcuate striae, with stronger ones at intervals, indicating the margin of the sinus at former periods, and very faint traces of spiral striae in the excavation of the upper whorls, lower part of each whorl sculptured with very fine growth-striae, likewise stronger at intervals and rather weak spiral lirae, of which there are 2 below the angle of the upper sculptured whorl, 2 or 3 on the next, 5 on penultimate and numerous ones on body-whorl. This latter is regularly attenuated towards the base and runs in the rather long, large canal, which in its basal part is free from lirae and only sculptured by fine and groovelike growth-lines. Aperture angularly ovate, with a moderately sharp angle above, ending below in a rather wide, slightly contorted canal. Peristome a little broken, probably rather thick, with a wide, rather shallow sinus above, then regularly arched; columellar margin concave at upper part, along the body-whorl, then thickened, with an obtuse, oblique fold at the upper part of this thicker one, directed to the left below, along the canal. Interior of aperture smooth, white, the whole columellar side with a strong laver of enamel.

Alt. 18, lat.  $7^{1}/_{2}$ ; apert. alt. 9, lat.  $2^{2}/_{5}$  Mill.

This species is very remarkable, I know of but one *Borsonia* from the Indian sea, *B. armata*, described in 1895 by BOETTGER (Nachrichtsbl. Deutsche Mal. Gesellsch. Band 27, p. 11), which is however in nearly every respect specifically distinct, the generic description of the columellar fold agrees very well with the Siboga-shell: "Columella longa, recta et stricta, superne plica transversa valida, hebeti instructa". COSSMANN (Essai de Paléoconch. comp. Vol. II, p. 96) gives as character of the genus: "columelle munie d'un ou de plusieurs plis", and gives (l. c. p. 97) many instances of variability in the number and place of these folds.

#### Ancistrosyrinx Dall.

1. Incistrosyrinx travancorica Smith var. granulata Smith.

SMITH. Ann. Mag. Nat. Hist. Ser. 7, Vol. XIII, 1904, p. 459.

Stat. 95. 5° 43'.5 N., 119° 40' E. Sulu-archipelago. 522 M. Stony bottom. 1 Spec.

Stat. 212. 5° 54'.5 S., 120° 19'.2 E. 462 M. Fine grey and green mud. 1 Spec.

The Siboga-specimens differ from the type described by SMITH (Ann. Mag. Nat. Hist. Ser. 6, Vol. XVIII, 1896, p. 368) figured in the Illustrations, Zool. "Investigator", Moll. pl. 7, fig. 1, 1 *a* by their granular surface of the lower part of body-whorl; that from Stat. 95, which is the best preserved, has the granules only towards the base of that whorl and on the cand, that from Stat. 212 agrees more with SMITH's description of the variety. 2. Ancistrosyrinx pulchella n. sp. Pl. XXVII, fig. 6.

Stat. 137. Channel between Makjan and Halmahera. 472 M. Fine, dark, muddy sand. 1 Spec. Stat. 159. 0° 59'.1 S., 129°48'.8 E. Halmahera-sea. 411 M. Coarse sand. 2 Spec.

Shell fusiformly pagodaeform, strongly keeled, yellowish-brown, lighter on the canal, with a narrow whitish zone below the periphery and another at the fasciole. Whorls 11, of which nearly 2 form a smooth, convexly-whorled nucleus, subsequent upper whorls nearly smooth, but with a strong keel, which is at first spinous, the spines being horizontally spreading, but soon become more or less upturned and have the character of erect trigonal spines, on the following 3 whorls, spreading again on last one; spines about 20 in number on last whorl. Upper part of these whorls concave, the fasciole smooth, but for fine growth-lines; this fasciole is bordered on the lower whorls by a liration, and the space between this and the spinous keel is faintly 2- or 3-lirate, the space between the keel and lower suture of whorls is conspicuously grooved, grooves 10 in number on penultimate whorl, about 38 on last one, where some of the upper and many of the basal ones have still intermediate lirae, lacking on the penultimate and older whorls. On the last part of last whorl, the shell is still sculptured by strong growth-lines, which, in crossing the interspaces or lirae between the grooves make them granulous. Last whorl contracted below its periphery, ending in a long, straight canal, which is strongly attenuated towards its base. Aperture elongately subtriangular, its upper margin nearly horizontal, with a deep, rather narrow sinus; outer margin joined to the upper one at a somewhat sharp angle, then slightly convex, thin, slightly fringed, columellar margin concave along the body-whorl, then running straight in the rather wide, long, nearly rectilinear canal, with a strong layer of white enamel on its whole length. Interior of aperture smooth, perhaps slightly grooved at its right margin.

Alt. 25, lat.  $9^{1}/_{2}$ ; apert alt., with canal 13, lat. 3 Mill.

This species may be readily distinguished from the preceding one by its sculpture, consisting of deep grooves between flat lirae, of which no trace in the type of A. travancorica in lower part of whorls, and even in the var. granulata, the granules are separated by shallow striae; the spines of a whorl are more numerous in that species and seem to be less pointed, though this latter difference may be due to the state of preservation. Mr. MELVILL has (Proc. Mal. Soc. Lond. Vol. VI, 1904, p. 56, Pl. 5, fig. 3) afterwards described another species, A. orientis, from the Gulf of Oman, which, as that author presumes, seems to be in very juvenile condition; even in that juvenile state, it differs from my species by its much stronger spines and sculpture, as may be clearly seen by comparison with the young specimen from Stat. 137, which has a length of 9.5 Mill. and has already the spiral sculpture and 17 spines on keel of last whorl.

## Surcula H. & A. Adams.

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SIEOGA-EXPEDITIE XLIX<sup>1</sup> $\mathcal{E}_*$ 

<sup>1.</sup> Surcula symbiotes Wood-Mason & Alcock.

WOOD-MASON & ALCOCK. Ann. Mag. Nat. Hist. Ser. 6, Vol. VIII, 1891, p. 444, fig. 13 a, b. SMITH. Ann. Mag. Nat. Hist. Ser. 6, Vol. XIV, 1894, p. 161, Pl. 3, fig. 7, 8.

Stat 45 7 24 S., 118 15.2 E. Flores-sea, 704 M. Fine grey sand with some radiolariae and diatomes. I. Spec.

The Siboga-specimen is smaller (36 instead of 57 Mill.), it may not be full-grown, but otherwise agrees with SMITH's extensive description and his fine figure.

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2. Surcula Melvilli n. sp. Pl. XXVII, fig. 7.

Stat. 262. 5° 53.8 S., 132° 48.8 E. Near Kei-islands, 560 M. Solid bluish grey mud. 1 Spec. Stat. 300. 10° 48.6 S., 123° 23'.1 E. Timor-sea, 918 M. Fine grey mud. 2 Spec.

Shell shortly fusiform, with long spire, thin, light yellowish red-brown. Nucleus wanting, remaining whorls (1, angularly convex, concave above, lower part with very oblique, somewhat irregular ribs, forming small tubercles on the upper whorls, thick folds on the lower ones; these ribs are not visible in the excavation, their number is 22 on last whorl; the whole shell is covered with fine growth-striae, intermingled with some coarser ones and very numerous, waved, spiral lirae, as well on the ribs as in the interstices and in the subsutural excavation; last whorl rapidly attenuated below periphery, ending in a rather short, relatively very slender canal, which is nearly white and sculptured with spirals in the same manner as the rest of shell. Aperture oval, with a blunt angle above, peristome thin, fragile, the sinus according to growth-lines probably wide, but not very deep. Columellar margin regularly curved, but suddenly directed to the left, at the entrance of canal, which is contortedly directed to the left; columellar margin with a white layer of enamel, interior of aperture brown, smooth.

Alt. 62, lat. 20; apert. alt.  $24^{1/2}$ , lat.  $8^{1/2}$  Mill.

This fine 'species is allied to *S. curina* Smith (Ann. Mag. Nat. Hist. Ser. 7, Vol. IV, 1899, p. 239; Zool. Ill. Investigator, Moll. Pl. 9, fig. 4), but the folds are more numerous than in that species, which has a much thicker, straighter canal and a shorter spire, a thickened infrasutural margin. *S. margaritae* Smith, which I found somewhat similar in shape of spire and ribs, has a considerably longer last whorl, inclusive of canal. The specimen from Stat. 262 is a smaller, much worn shell, of somewhat doubtful character.

### 3. Surcula supracostata n. sp. Pl. XXVII, fig. 8.

Stat. 45. 7° 24' S., 118° 15'2 E. Flores-sea. 794 M. Fine grey mud with some radiolariae and diatomes. 2 Spec.

Shell fusiform, with short canal, thin, shining, light yellowish-white. Nucleus wanting, remaining whorls 8, nearly regularly convex, very slightly exavated below the conspicuous but shallow suture in lower whorls, more so in upper ones. Sculpture consisting in the upper whorls of thick axial ribs, disappearing on the sixth whorl, which is 9-ribbed, the lower whorls are nearly smooth, but are sculptured under the lens by fine, strongly waved growth-lines, more conspicuous at irregular intervals; the whole shell crossed by very faint spirals, scarcely visible on the upper part of whorls, stronger on the lower part, having the appearance of crowded lirae on the canal. Last whorl regularly attenuated below, ending in a short, wide canal. Aper-

ture elongately oval, angular above, peristome with a wide but shallow sinus at the suture, then strongly protracted; columellar margin nearly straight, covered by a thin layer of enamel.

Alt. 32, lat. 11; apert. alt. 16, lat. 5 Mill.

I find no nearly allied species; this new one is remarkable for the difference in sculpture of the upper and lower whorls.

4. Surcula timorcnsis n. sp. Pl. XXVII, fig. 9.

Stat. 300. 10° 48'.6 S., 123° 23'.1 E. Timor-sea. 918 M. Fine grey mud. 1 Spec.

Shell elongately fusiform, with rather short canal, thin, dirty white. Nucleus wanting, remaining whorls 9, divided in 2 parts, of which the upper part is excavated, slightly convex in itself in last 2 whorls, the lower part of each whorl with rounded, oblique axial ribs, disappearing on last whorl, where there are only traces on ventral side, 11 in number on penultimate whorl. The finer sculpture consists of fine and coarse growth-striae and spiral ones, stronger below the suture, across the convex ribbed part, fainter near the base. Aperture elongated, angular above, peristome thin, with a wide, shallow sinus, just below the suture, then strongly protracted; columellar margin rather straight, with a faint fold at its upper half, not very conspicuous in the front view, with a rather thin, smooth layer of enamel; canal wide, slightly directed to the left. Last whorl regularly attenuated towards its base.

Alt. 53, lat.  $15^{1}/_{2}$ ; apert. alt. 22, lat.  $6^{1}/_{2}$  Mill.

This species is similar in shape to the preceding one, but is more slender, nearly the whole shell is ribbed, it is stronger and less shining, differs in spiral sculpture and by the columellar fold. This latter character makes its place in *Surcula* somewhat doubtful and reminds *Borsonia*, but the fold is rather blunt, like in some specimens of *Pleurotoma (Gemmula) congener* Smith (may it be accidental?) and in other respects it better agrees with many species of *Surcula*, so I have located it, though with some doubt, in this genus.

5. Surcula pyramidalis n. sp. Pl. XXVII, fig. 10.

Stat. 300. 10°48'.6 S., 123°23'.1 E. Timor-sea. 918 M. Fine grey mud. 1 Spec.

Shell fusiform, with strictly pyramidal spire and rather long, slender canal, thin, rather smooth, greyish-white. Nucleus wanting, remaining whorls 9, straight, the straight line only interrupted by a row of short, fold-like, oblique tubercles at lower part of whorls, somewhat fainter near aperture, 17 in number on penultimate whorl; the whorls have a second row of slightly oblong, bead-like tubercles, just below the suture, about 30 in number on last whorl; the spiral sculpture consists of impressed striae, crossing the lower half of basal row of tubercles on each whorl, and 2 or 3 just above the suture, the whole basal part of last whorl being spirally striated or grooved, the upper part of whorls is nearly smooth, but for a few scarcely visible spirals and fine and coarse flexuous growth-lines, becoming much coarser on canal, which by the intercrossing of this sculpture is slightly granular. Aperture angular above, ending below in a rather long, narrow, slightly contorted canal; peristome thin, with a wide, shallow sinus above, trongay protracted in its median part, columellar margin strongly contorted, with a narrow, thin layer of enamel.

Mit. 45, lat. 15 ,; apert. alt. 24, lat. 6 Mill.

This species is very peculiar by its shape and sculpture. I find no allied forms,

6. Surcula brachytoma n. sp. Pl. XXVII, fig. 11.

Stat. 284. 8 43.1 S., 127 16'.7 E. Timor-sea. 828 M. Grey mud. 1 Spec. Stat. 300, 10°48.6 S., 123°23.1 E. Timor-sea. 918 M. Fine grey mud. 1 Spec.

Shell elongately fusiform, with long spire and short canal, strong, white under a greyish epidermis. Nucleus wanting, remaining whorls 8, scarcely convex, their upper part excavated, separated by a conspicuous, waved suture; sculpture consisting of strong, rounded ribs, scarcely appreciable in the excavation, 11 in number on last whorl, below the suture are short folds, mainly corresponding to the ribs, with an intermediate one in the interstices; of spirals a stronger one at the limit between ribbed part and excavation, making the ribs slightly tubercled, and 2 or 3 fainter ones lower on; base of last whorl with about 10 grooves; moreover the shell is reticulated by numerous unequal, but always much finer spirals and growth-striae, Aperture oblong, angular above, ending below in a wide, short canal, slightly directed to the left; peristome strong, scarcely with a sinus above, which is uncommonly shallow, columellar margin moderately flexuous, with a rather thick, smooth layer of enamel.

Alt. 47, lat.  $12^{1}/_{2}$ ; apert. alt.  $17^{1}/_{2}$ , lat. 4 Mill.

This species has much puzzled me; if the columella had been folded, I should have taken it for a *Mitra*; however Mr. SMTH, who had the kindness to compare it, agrees with me that it is a *Surcula*, but not typical; the specimen from Stat. 284 is still very young, but evidently belongs to the same species. I know no species that is allied.

7. Surcula obtusigemmata n. sp. Pl. XXVII, fig. 12.

Stat. 76. 4° 22.1 S., 180° 16'.9 E. Makassar-strait. 2029 M. Fine grey mud. 1 Spec. Stat. 137. Channel between Makjan and Halmahera. 472 M. Fine, dark muddy sand. 2 Spec. Stat. 271. 5° 46'.7 S., 134° 0' E. Arafura-sea. 1788 M. Bluish green mud. 1 Spec.

Shell broadly fusiform, with pyramidal spire and rather long, slender canal, thin, yellowishgrey. Nucleus of largest specimen wanting, remaining whorls 6, not very convex, but apparently so by a row of coarse, obtuse, rounded beads, near the base of upper whorls and the periphery of last whorl, where they are 14 in number; a second row of small tubercles, rounded in upper whorls, having the character of oblique folds on lower ones, runs just below the deep suture, on a subsutural rib; lower on the shell is lirate, 2 faint lirae in the interstices of the peripheral beads, 2 strong ones below the beads of last whorl and numerous fainter ones on base and canal; the shell is covered with very fine growth-lines, last whorl strongly attenuated below. Aperture oval, angular above, ending in a rather long, narrow canal below; peristome thin, with a wide, rather shallow sinus above, then strongly protracted; columellar margin rather straight, directed to the left near and along the canal, with a thin layer of white enamel.

Alt.  $22^{1}$ , lat.  $9^{1}_{2}$ ; apert. alt.  $13^{1}_{2}$ , lat.  $3^{3}_{1}$  Mill.

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The specimens from Stat. 137 are very small and notwithstanding the great difference in depth, seem to belong to this species, the sculpture being identical, their nucleus is yellowish-brown and consists of about  $1^{1}/_{2}$  smooth, convex whorl.

This species, which in many respects resembles some other species of the section Gemmula, differs by its sinus *above* the shoulder, near the suture. In sculpture it has some resemblance with *Brachytoma subsuturalis* v. Martens.

8. Surcula undosa n. sp. Pl. XXVII, fig. 13.

Stat. 45. 7° 24' S., 118° 15'.2 E. Flores-sea. 794 M. Fine grey mud with some radiolariae and diatomes. 1 Spec.

Shell elongately fusiform, with rather long canal, rather strong, yellowish-white. Apex wanting, remaining whorls  $6^{1}/_{2}$ , separated by a conspicuous, simple suture, convex, slightly excavated at their upper part. Sculpture consisting of numerous, very irregular, spiral striae, more conspicuous at the base of shell and canal, scarcely traceable in the excavation; upper whorls with a peripheral row of obtuse tubercles, which in the uppermost whorls have the character of ribs; these tubercles disappear on last whorl, which has only a more prominent keel-like spiral just below the excavation; the whorls are moreover crossed by numerous growth-lines, strongly curved and conspicuous in the excavation, oblique and sometimes rib-like in the lower part, which produces a wavy appearance of some parts of the shell. Aperture oblong, angular above, ending below in a rather long, broad canal, slightly directed to the left; peristome broken, but according to growth-lines with a deep sinus at the suture, then strongly protracted; columellar margin regularly curved, with a thin layer of enamel, slightly contorted along the canal.

Alt. 30, lat. 11; apert. alt. 15, lat.  $4^{1}/_{2}$  Mill., the breadth of shell and aperture may have been more, if the peristome were complete.

I know no species which is nearly allied amongst the species from the indian ocean; Mr. SMITH, who has kindly compared this and the following forms, could not identify them with any of the species, figured or unfigured, described by him in past years.

9. Surcula variabilis n. sp. Pl. XXVIII, fig. 1.

Stat. 178. 2° 40' S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 12 Spec.

Shell elongately fusiform, with long canal, thin, yellowish-white. Whorls 8, of which about 2 (if normal) form a smooth, slightly inflated, reddish-brown nucleus; post-nuclear whorls subangular, concave in their upper part, separated by a conspicuous waved suture. Sculpture consisting of a row of tubercles at the periphery, sharper in upper whorls, more obtuse lower on, a row of granules, just below the suture, becoming scarcely visible in last whorl and entirely or nearly wanting in some specimens, the lower part of whorls with 1 or 2 rather faint, spiral lirae, the part of last whorl below the keel, with more or less conspicuous spirals, which vary from regular flat lirae to more irregular rib-like ones; in the latter case mainly 2 spirals are stronger; moreover there are extremely fine spiral striae and rather conspicuous growth-striae. Aperture congated, angular above, peristome thin, with a wide sinus above, then protracted, columellar margin nearly straight, only slightly concave above, ending in a rather long, narrow canal, covered with a thin layer of enamel. Interior of aperture smooth.

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. Mt.  $15^{4}_{2}$ , lat. 6; apert. alt. 11, lat.  $2^{1}/_{4}$  Mill.

Alt.  $13^1$ , lat. 5; apert. alt. 7, lat.  $1^5/_6$ .

This species, at least the largest specimen, has in outline much resemblance with the West-Indian *S. syngenes* Wats. (Challenger Gastrop, Pl. 20, fig. 2) but is different in sculpture, though the tubercled keel is very like. If I had seen only 2 extreme specimens, I certainly should have been induced to describe 2 species, the nucleus is in several specimens loosely coiled, the spirals differ considerably in strength, the subsutural granules may be faint or entirely wanting, but these differences are intercrossing, so that I cannot trace a line of demarcation between them and so I left them together.

10. Surcula pulchra n. sp. Pl. XXVIII, fig. 2.

Stat. 212. 5° 54.5 S., 120° 19'.2 E. Banda-sea. 462 M. Fine grey and green mud. 1 Spec.

Shell shortly fusiform, with short canal and pyramidal spire, rather thin, white. Nucleus wanting. Remaining whorls 6, angular, separated by a conspicuous, waved suture, their upper part excavated. Sculpture consisting of narrow axial ribs, 14 in last whorl, oblique in upper whorls, elegantly flexuous in last one and a row of oblique, short plicae, on a faint subsutural rib; the axial ribs end in rather sharp tubercles in their upper part at the limit of excavation; the ribs are crossed by narrow spiral lirae, 3 more conspicuous and some fainter ones on penultimate whorl, numerous, rather unequal ones on last whorl; in crossing the ribs, they produce still 2 fainter tubercles on the lirae of penultimate whorl; numerous ones on last whorl, but not on canal, where the ribs disappear; moreover the shell is crossed by very fine growth-striae, more conspicuous in excavation and fine spiral striae, of which about 2 in excavation. Aperture oval, angular above, ending in a short, wide canal below, slightly directed to the left; peristome thin, broken, according to growth-lines with a moderately wide and deep sinus, then protracted; columellar margin concave above, slightly tortuous at the canal, with a thin layer of enamel; interior of aperture smooth, white.

Mt.  $17^{1}/_{2}$ , lat. 8; apert. alt. 9, lat. 3 Mill.

This species is remarkable for its elegant sculpture.

11. Surcula trophonoidea n. sp. Pl. XXVIII, fig. 3.

Stat. 45. 7° 24' S., 118° 15'.2 E. Flores-sea. 794 M. Fine grey mud, with some radiolariae and diatomes. 1 Spec.

Stat. 178. 2°40' S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 1 Spec.

Shell fusiform, with moderately long canal, thin, white. Nucleus eroded. Whorls 8, angular, eparated by a conspicuous, slightly waved suture, upper part excavated. Sculpture consisting of narrow, oblique ribs, ending at the excavation with small, slightly pointed tubercles: the e-cavation is nearly smooth, but with short plicae on a faint subsutural rib, more conspicuous

on upper whorls, disappearing on last one and curved growth-lines, lower part of whorls with flat lirae, 6 in number on penultimate whorl, separated by narrow grooves; on the base of last whorl and canal, the grooves surpass the lirae in breadth; these lirae are waved and the whole shell is crossed by growth-lines, stronger at intervals. Aperture oblong, angular above, with a wide canal below; peristome thin, broken; according to growth-lines, with a shallow sinus, then slightly protracted; columellar side nearly straight, slightly concave above, a little directed to the left, along the canal, with a thin layer of enamel, not quite concealing the lirae of surface. Interior of aperture, smooth, white.

Alt. 16, lat.  $5^{3}/_{4}$ ; apert. alt.  $7^{3}/_{4}$ , lat. 2 Mill.

This species has in outline and sculpture resemblance with some species of *Trophon*, but the sinus leaves no doubt about its belonging to the *Pleurotomidae*. The specimen from Stat. 178 is young.

12. Surcula biconica n. sp. Pl. XXVIII, fig. 4.

Stat. 212. 5° 54'.5 S., 120° 19'.2 E. Banda-sea. 462 M. Fine grey and green mud. 1 Spee.

Shell biconical, with short canal, rather thin, white. Whorls 8, of which about 2 form a convexly whorled nucleus, which seems to be at first smooth, the second whorl being obliquely costulate, postnuclear whorls separated by a conspicuous, distinctly waved suture, angular, excavated above, with rather narrow axial ribs, 14 in number on last whorl, scarcely indicated in excavation; the whorls are divided by a strong keel, consisting of depressed tubercles, forming the upper part of ribs, at the base of excavation; moreover there are 3 remote spirals on the scarcely contracted last whorl, which, in crossing the ribs, make them beaded, and 2 or 3 very faint, plain ones on canal; in the upper whorls the uppermost of these lirae is nearly covered by the suture and causes the conspicuous waves, otherwise the shell is nearly smooth, but for very fine growth-lines, more conspicuous in the excavation. Aperture oblong, angular above, with a short open canal below; peristome thin, broken, according to growth-lines with a shallow sinus above, then slightly protracted; columellar margin nearly straight, with a thin layer of enamel.

Alt.  $8^{3}/_{4}$ , lat.  $4^{1}/_{2}$ ; apert. alt.  $4^{1}/_{2}$ , lat.  $1^{3}/_{4}$  Mill.

This species is peculiar by its shape and sculpture. I find nothing like it amongst the species of *Surcula*.

13. Surcula celebensis n. sp. Pl. XXVIII, fig. 5.

Stat. 88. 0° 34'.6 N., 119° 8'.5 E. Makassar-strait. 1301 M. Fine grey mud. 4 Spec.

Shell small, sub-biconical, with short canal and subgradate spire, thin, subpellucid, white. Whorls  $6^{1}/_{2}$ , of which nearly 2 form a smooth, shining, convexly-whorled nucleus; subsequent whorls angular, excavated above, separated by a conspicuous, irregularly waved suture, with a rather strong rib just below it, with short bead-like folds, lower part of whorls with oblique ribs, 15 in number on last whorl, tubercled at their upper part below the excavation, moreover the Lasal part of whorls is crossed by faint spirals, 2 in number on penultimate, about 10 in suchtly contracted last whorl, of which latter the upper ones are more conspicuous, bead-like in using the ribs, those on the canal plain, lastly the whorls are crossed by growth-lines. Aperture elongately oval, angular above, with a short, wide canal below; peristome thin, broken, according to growth-lines with a wide, rather deep sinus above, then considerably protracted, columellar side concave above, slightly tortuous below, with a conspicuous, appressed layer of enamel.

Alt.  $S_{2}^{1}$ , lat.  $3_{3}^{1}$ ; apert. alt.  $3_{3}^{3}$ , lat.  $1_{3}^{3}/_{3}$  Mill.

Though small, I think this form to be distinct and not to be identified with the young of any described species.

14. Surcula sp.

Stat. 178. 2°40 S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 2 Spec.

These specimens are nearly allied to the preceding species, they are a little narrower and the infrasutural rib is less developed and has only few traces of the folds, as the specimens are very young, I think it is not advisable to name or describe them, they may belong to a slight variety of the former.

15. Surcula Nierstraszi n. sp. Pl. XXVIII, fig. 6.

Stat. 271. 5°46'.7 S., 136°0' E. Arafura-sea. 1788 M. Bluish green mud. 1 Spec.

Shell broadly fusiform, with rather short spire, thin, light greyish-white. Nucleus wanting, remaining whorls nearly 6, of which the upper one is likewise eroded, angularly convex, slightly excavated below the deep suture. Sculpture consisting of slightly oblique, narrow ribs, arcuated in the excavation, 15 in number in penultimate whorl, with blunt tubercles about the median part of upper whorls and on shoulder of last whorl, with beads at their upper extremities; just below the suture, the shell is covered with fine growth-striae and spiral lirae, these lirations being faint in the excavation, stronger and crowded in lower part of whorls, more remote on canal; last whorl attenuated below, passing without marked limit in the rather short canal. Aperture oval, slightly angular above, with a rather narrow canal below: peristome broken, according to growth-striae with a very shallow sinus below the suture; columellar margin concave above, directed to the left along the canal, with a thin layer of enamel.

Operculum thin, corneous, with a terminal nucleus at the left side.

Alt.  $25^{1}/_{1}$ , lat.  $12^{1}/_{1}$ ; apert. alt. 14, lat. 5 Mill.

Radula with 2 rows of teeth, in about 12 transverse rows, each tooth (c) with a rather sharp point and a deep sinus at its basal margin, separating 2 unequal digitations.

The shell was of rather obscure nature, scarcely any trace of a sinus was visible and if at all by the aid of the growth-lines, it is very unsignificant, the operculum is not characteristic for the genus; after I had seen the radula, no doubt was left about its belonging to the *Pleurotonitive* and by its sinus it nearest approaches *Surcula*, though the teeth resemble those of *Pleurotoma* s. str., as figured by TROSCHEL; as the radula of only few species is known, I think the characters of the shell may provisionally decide.

#### Clavosurcula n. gen.

Shell clavate, with a very broad body and long, slender canal, according to growthstriae with a wide, deep sinus, occupying nearly the whole breadth of upper whorls; nucleus smooth, swollen; operculum wanting.

Type: Clavosurcula Sibogae n. sp.

I could not refer this specimen to any known genus, its peculiar shape, which reminds that of *Steiraxis* Dall., is still too much different to locate it in that genus. In some degree it seems to be allied to *Surcula*, and so I have provisionally located it near that genus; unfortunately the operculum and soft parts are wanting; though the shell has the appearance of being not adult, it is too remarkable to neglect it.

# 1. Clavosurcula Sibogae n. sp. Pl. XXVIII, fig. 7.

Stat. 45. 7°24'S., 118°15'.2 E. Flores-sea. 794 M. Fine grey mud with some radiolariae and diatomes. 1 Spec.

Shell clavate, with convex spire, attenuated towards the apex, with long, slender canal, thin, pellucid, white. Whorls 8, of which about  $1^{1/2}$  form a smooth, swollen nucleus, post-nuclear whorls keeled, the keel running in the 2 uppermost post-nuclear whorls a triffe above the linear suture, in the following whorls it is coalescing with the suture, on the last whorl it has the appearance of a blunt, rounded rib, with a slight groove above it; the upper whorls are nearly straight, the last 2 ones slightly convex, last whorl rapidly contracted below the keel. Sculpture consisting of numerous raised spiral striae, rather fine in upper part of whorls, very fine on a narrow zone just above the keel, coarser on the keel, much coarser on the basal part of last whorl and on the canal, which is long and slender. Aperture rhomboid, with a moderately sharp angle above and an obtuse angle at the keel; peristome thin, broken, according to growth-lines with a wide, deep sinus above, then strongly protracted. Columellar margin nearly straight above, along the body-whorl, then concave, upper part at the canal straight, then strongly contorted to the left, with a thin layer of enamel, stronger at upper part of canal; interior of aperture smooth, but apparently striated by the transparency of the shell.

Alt. 38, lat. 20; apert. alt. 16, lat.  $7^{1}/_{2}$  Mill.

## Mangilia Risso.

I. Mangilia terpnisma Melvill & Standen.

MELVILL & STANDEN. Proc. Zool. Soc. Lond. 1901, p. 443, Pl. 24, fig. 8.

Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand very fine. 2 Spec.

Stat. 193. Sanana-bay, East coast of Sula Besi. 22 M. Mud. 1 Spec.

Stat. 285. Near South coast of Timor. 34 M. Limit between mud and coral, Lithothamnion. 1 Spec.

The specimens vary in size but agree in shape, sculpture and colour-markings.

SIBOGA-EXPEDITIE NLIN<sup>1</sup>e.

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var josz ela 11. var.

Stat. 88. 0 34.6 N., 110 8.5 E. Makassar-strait, 1301 M. Fine grey mud. 1 Spec.

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Smaller than the type, having only a length of  $5/_3$  Mill., thinner, with less developed sulpture and quite transparently white, but agreeing in all its essential characters.

2. Mangilia apollinea Melvill.

MFLVILL, Proc. Mal. Soc. Lond. Vol. VI, p. 166, Pl. 10, fig. 20.

Stat. 261. Elat, West coast of Great Kei-island, 27 M. Mud. 1 Spec.

Mr. MELVILL, who examined this specimen, says it is in better condition and more fullgrown than his Gulf of Oman specimens, but otherwise it differs only very little.

3. Mangilia cavernosa Reeve.

REEVE, Proc. Zool. Soc. Lond. 1846, p. 60. — Conch. Ic. Vol. 111, Mangelia, fig. 8. TRVON. Man. of Conch. Vol. VI, p. 251, Pl. 21, fig. 26.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. 3 Spec. Stat. 260. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 4 Spec.

Slightly varying in number of ribs but agreeing in other particulars.

4. Mangilia butonensis n. sp. Pl. XXVIII, fig. 8.

Stat. 204. Between islands of Wowoni and Buton, northern entrance of Buton-strait. 75-94 M. Sand with dead shells. 1 Spec.

Shell elongately fusiform, with high spire and moderately long canal, smooth, shining, pellucid, white. Whorls 8, of which  $3^{1}/_{2}$  seem to form a convexly-whorled nucleus, of these the upper 2 are smooth, the rest with crowded axial ribs; post-nuclear whorls with more remote ribs, 7 or 8 on penultimate whorl, each rib with a small point near its middle, giving an angular appearance to these whorls, though the interstices are nearly regularly rounded, upper part of whorls very faintly crenulate, base of last whorl with very faint spiral striae, more conspicuous on ribs and a few stronger ones on canal. Aperture oblong, narrow, slightly angular above, below with a rather wide canal; peristome sharp, with a shallow sinus above and a strong rib at some distance behind its margin, columellar margin slightly concave above, directed to the left below, with a thin layer of enamel, interior of aperture smooth.

Alt.  $11^{1}/_{2}$ , lat. 4; apert. alt.  $5^{1}/_{4}$ , lat. 1 Mill.

This species has some resemblance with *M. polita* Hinds, but the ribs are less regularly placed, the canal is less slender and in that species the peristome is plain, though this may depend on age.

5. Mangilia rufostrigata n. sp. Pl. XXVIII, fig. 9.

Stat. 159. 0 59'.1 S., 129 48'.8 E. Halmahera-sea. 411 M. Coarse sand. 2 Spec.

Shell shortly fusiform, with short canal, smooth, shining, yellowish-white, with more or less conspicuous traces of red-brown streaks on ribs; whorls 7, of which a little more than one forms a convex, smooth nucleus; post-nuclear whorls separated by a deep, waved suture, convex, angular, slightly excavated at their upper part, with rather strong, rounded, oblique, axial ribs, 11 in number on last whorl, that behind the peristome stronger; these ribs are pointedly tubercled about their median part, just below the excavation in upper whorls, at the shoulder of last whorl, on this latter the ribs are fainter towards the base, otherwise the shell is nearly smooth, but for very faint, remote spirals, a little more conspicuous on canal, and fine growth-lines. Aperture oval, angular above, with a wide, short canal below; peristome thin, broken, with a shallow sinus above. Columellar margin concave, slightly directed to the left below, with a rather thin layer of enamel, stronger near its base.

Alt. 10, lat.  $4^{1}/_{4}$ ; apert. alt. 4, lat.  $1^{3}/_{5}$  Mill.

6. Mangilia hexagonalis Reeve.

REEVE. Proc. Zool. Soc. Lond. 1845, p. 118. — Conch. Ic. Vol. I, Pleurotoma, fig. 293. TRYON. Man. of Conch. Vol. VI, p. 251, Pl. 20, fig. 1.

Stat. 258. Tual, Kei-islands. 22 M. Lithothamnion, sand and coral. 1 Spec.

The specimen is very large, being 11 instead of 8 Mill. in length, but otherwise exactly agrees with REEVE's figure and description. A close spiral striation, mentioned by TRYON, seems to have been overlooked by REEVE.

7. Mangilia multigranosa n. sp. Pl. XXVIII, fig. 10.

Stat. 47. Bay of Bima near South fort. 55 M. Mud with patches of fine coralsand. I Spec. Stat. 260. Near North point of Nuhu Jaan. Kei-islands. 90 M. Sand, coral and stones. I Spec.

Shell elongately pyramidal, with short canal, strong, yellowish-brown. Whorls 9 or 10, of which the uppermost is eroded, followed by about 2 closely ribbed ones; subsequent whorls slightly convex, with a deep suture, hexagonal by 6 continuous, rounded ribs. Sculpture consisting of numerous spirals, of which the peripheral one and 2 or 3 lower ones are more prominent, at all there are on penultimate whorl of largest specimen about 10 stronger spirals and 3 intermediate ones in each interstice, of these spirals the median one is again stronger than the other ones (in the smaller specimen this arrangement is less conspicuous); each of these spirals is closely covered with a row of granules, having the character of compressed squamae on the principal lirae, this sculpture extends also over the whole last whorl and canal. Aperture short, oval, rounded above, with a short, narrow canal below; peristome rather blunt, with a shallow sinus above and a strong rounded rib externally, 3 tooth-like tubercles in its interior, of which the uppermost is the largest; columellar margin nearly straight, but slightly concave above, directed to the left below, with a strong layer of enamel, only appressed above, free below, interiorly with a strong tubercle above and 2 flat plaits about its median part, each plait divided by a groove.

Alt 12, lat 1, apert alt. 4, lat. 1 Mill.

Alt 8 , lat 3; apert. alt. 31 p. lat. 7, Mill.

This species has much resemblance with the preceding one and with M. obeliscus Reeve, Lat is easily distinguished by its very beautiful, elaborate sculpture; the smallest specimen, though full grown, as may be seen by its peristome, has the columellar plaits less developed.

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8. Mangilia Fairbanki Nevill.

NEVH11, Journ. As. Soc. Beng. 1875, p. 85, Pl. 7, fig. 2, TRYON, Man. of Conch. Vol. VI, p. 270, Pl. 22, fig. 48.

Stat. 4. Djangkar (Java). 9 M. Coarse sand. 1 Spec.

The specimen is not in good condition, being worn and not quite developed, correspondingly somewhat doubtful, but it agrees well with a specimen from Bombay, which Mr. MELVILL had the kindness to send for comparison.

9. Mangilia septemcostata n. sp. Pl. XXVIII, fig. 11.

Stat. 51. Madura-bay, 69-91 M. Fine grey sand, coarse sand with shells and stones. 2 Spec.

Shell fusiform, with rather long canal, strong, light yellowish-brown, with faint red-brown bands, interrupted by the ribs, one rather broad band, just below suture, the second below the periphery, a third near the base of last whorl, the base of canal being likewise tinted. Whorls about  $7^{1}/_{2}$ , of which  $2^{1}/_{2}$  form the convexly-whorled nucleus, of which about the first whorl is smooth, the other ones are closely ribbed; subsequent whorls slightly convex, each with 7 continuous ribs, which have a small sharp point a little above the conspicuous, waved suture and are faintly crenulated, especially on lower part of last whorl; interstices smooth, but for a faint spiral, connecting the costal points and a few spirals on the canal. Aperture oblong, sharply angular above, with a rather long, narrow canal below. Peristome not developed, probably with a shallow sinus above, columellar margin nearly straight, slightly directed to the left along canal.

Alt. 9, lat.  $3^2/_5$ ; apert. alt.  $4^3/_4$ , lat. 1 Mill.

Though the specimens are not full-grown, the characters seemed to be peculiar enough to describe the species; of course the measurements may be altered, if complete specimens are afterwards procured.

var. lenuis n. var.

Stat. 260. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 1 Spec. Shell thin, of a hyaline, whitish colour, with the points of the ribs a little more remote from lower suture, but otherwise so much the same in number of ribs and in other particulars of sculpture, that I think this form has only varietal rank, perhaps depending on greater depth. It is likewise juvenile.

10. Mangilia multicostata n. sp. Pl. XXVIII, fig. 12.

Stat. 200. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 1 Spec.

Shell fusiform, with pyramidal spire and short canal, thin, smooth, shining, yellowishwhite with red-brown blotches in 3 more or less interrupted bands. Whorls 9, of which about 2 form a smooth, convexly-whorled nucleus. Post-nuclear whorls sharply angular, their upper part, occupying about  $\frac{9}{3}$  of each whorl, slightly concave. Sculpture consisting of numerous, sharp axial ribs, 16 in number on last whorl, with pointed tubercles at the angle, connected by a rather faint spiral; moreover there are very faint growth-lines and spiral striae, more conspicuous on the base of last whorl, especially on the ribs, and a few stronger ones on the canal. Aperture oval, angular above, with a short, broad canal below; peristome broken, probably with very shallow sinus above, columellar margin concave above, directed to the left below along the canal, with a thin layer of enamel.

Alt. 11, lat. 4; apert. alt.  $4^{1}/_{2}$ , lat.  $1^{1}/_{4}$  Mill.

Though this shell is evidently not quite adult, the thin peristome being broken, it seemed to differ from all known species, so I have described it; it resembles in many respects the var. *tenuis* of the preceding species, but cannot be united on account of the number of ribs, which is more than double, moreover the canal is quite different, being short and broad.

11. Mangilia elegantissima Melvill & Standen.

MELVILL & STANDEN. Ann. Mag. Nat. Hist. Ser. 7, Vol. XII, 1903, p. 319, Pl. 23, fig. 23.

Stat. 274. 5° 28'.2 S., 134° 53'.9 E. Near Aru-islands. 57 M. Sand and shells, stones. 1 Spec.

I owe the identification of this species to Mr. MELVILL, without his assertion I should not have recognized it, as the number of axial ribs in the Siboga-specimen, seems to be considerably more numerous than in the quoted figure.

12. Mangilia savuensis n. sp. Pl. XXVIII, fig. 13.

Stat. 306. 8° 27' S., 122° 54'.5 E. Savu-sea. 247 M. Sandy mud. 1 Spec.

Shell elongately fusiform, with rather short canal, rather strong, yellowish-white, with traces of red-brown bands (bleached). Whorls scarcely 9, of which about 3 form a convexly-whorled nucleus, of these about the upper one is smooth, the rest at first faintly, then strongly ribbed, with numerous elegant ribs and traces of a keel near the base of visible part of last nuclear whorl. Subsequent whorls angularly convex, separated by a deep, strongly waved suture. Sculpture consisting of rounded, not continuous, axial ribs, 7 in number on last whorl, crossed by spirals, of which a faint crenulated one, just below the suture, another strong one at the periphery, making the ribs slightly tubercled, and 3 spirals below it on penultimate whorl, 16 on last whorl and canal, moreover a few very faint spirals above the periphery and numerous growth-lines. Aperture elongately oval, with a sharp angle above and a rather wide canal below; peristome broken, probably with a rather shallow sinus above; columellar margin nearly straight, with a thin layer of enamel.

Alt. 9, lat. 3; apert. alt.  $3^{1}/_{2}$ , lat. 1 Mill.

I know no species which is nearly allied to this new one. Mr. MELVILL says it is allied

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to *M* solution, described (Proc. Zool, Soc. Lond. 1901, p. 445, Pl. 24, fig. 10) as a *Clathurella*, I at the ghort may have some resemblance, it differs in many particulars.

13. Mangilia crassicingulata n. sp. Pl. XXIX, fig. 1.

Stat. 51. Madura-bay, 69-91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec.

Shell pyramidal, with very short canal, thin, semipellucid, reddish-brown with a white zone at the shoulder, a white canal, ribs and part of spirals. Whorls 11, of which about 3 form the nucleus, with very deep suture, the uppermost whorl smooth, the other ones with a conspicuous keel; post-nuclear whorls very convex, with a deen, waved suture. Sculpture consisting of remote, rounded, axial ribs, 9 in number on last whorl and numerous spiral lirae, 2 narrow ones below the suture, 5 strong ones on penultimate whorl, of which the upper 2 border the white zone and are white themselves, the 5<sup>th</sup> is very strong, but falls in the suture of upper whorls, forming the strong spiral rib on last whorl, which suggested the name, accompanied by a narrow one; below this the shell is rapidly contracted, with only faint spirals, but divided by the ribs, which produce beautiful excavations in their interstices (reminding those of *Clath*. caternosa); canal with a few stronger lirae; moreover the shell is sculptured by conspicuous growth-lines, as well on the ribs as in their excavated interstices and a few intermediate lirae, producing on the whole shell a fine cancellation. Aperture oval, rounded above, with a short, open canal below, peristome thin, with a rather deep sinus above, columellar margin nearly straight, with a conspicuous layer of enamel, not appressed, leaving an umbilical chink; interior of aperture with a few lirae.

Alt.  $14^{1}/_{2}$ , lat. 5; apert. alt.  $3^{5}/_{6}$ , lat.  $1^{1}/_{2}$  Mill.

This species has some resemblance with a very elongate *Phos senticosus*, but is of course quite different. Perhaps it might as well be located in *Clathurella* on account of its sculpture and aperture, but it appears that it is more allied to some species of *Mangilia*.

# 14. Mangilia halmaherica n. sp. Pl. XXIX, fig. 2.

Stat. 137. Between Makjan and Halmahera. 472 M. Fine, dark muddy sand. 4 Spec.

Shell fusiform, with rather short canal, pellucid, white. Whorls about 8, of which about 3 form the nucleus, which is large, convexly-whorled, at first smooth, then axially ribbed; postnuclear whorls angular, concave above. Sculpture consisting of rather narrow axial ribs, about 12 or 13 on last whorl, crossed by spirals, of which one more or less strong one, just below the suture, another at the angle and one or two on the lower part; last whorl with canal, with about 12 spirals, those on the upper whorls and 5 upper ones on last whorl are sharply tubercled in passing the ribs, those on the contracted part of last whorl and canal, more plain; moreover the whole shell is covered with fine growth-lines. Aperture elongately-oval, angular above, with a rather short, wide canal below; peristome thin, with a moderately deep sinus above, coluncell r margin slightly concave above, directed to the left below.

Alt. 7 , lat. 3; apert. alt.  $3^{1}/_{2}$ , lat. 1 Mill.

Three of the specimens are quite alike, differing only in size, on account of age, so I have described them as the type; the fourth is much more developed in sculpture, so much that I was in doubt if it ought not to be separated, the spirals are stronger, there is a spiral in the excavation, on the contrary the last whorl has at all only 12 spirals, besides that below the suture, which is weaker, and I find very fine spirals in the interstices, the last rib before the peristome is strongly developed; as it is however not impossible that the other specimens are not quite developed, I think the other differences may be individual; unfortunately the nucleus of the fine specimen is worn, the outer layer being lost, so I could not make out, if it has been identical.

#### Cithara Schumacher.

1. Cithara marginelloides Reeve.

REEVE. Proc. Zool. Soc. Lond. 1846, p. 60. — Conch. Ic. Vol. III, Mangelia, fig. 6. TRYON. Man. of Conch. Vol. VI, p. 261, Pl. 24, fig. 22.

Stat. 323. Sangkapura-roads, Bawean-island. 12 M. Mud. 1 Spec.

TRVON unites *C. columbelloides* Reeve with this species, but BOETTGER (Nachrichtsbl. der Deutschen Mal. Gesellsch. 1895, p. 19) has clearly pointed out the differences between the two species.

2. Cithara fusiformis Reeve.

REEVE. Proc. Zool. Soc. Lond. 1846, p. 61. — Conch. Ic. Vol. III, Mangelia, fig. 19. TRYON. Man. of Conch. Vol. VI, p. 268, Pl. 23, fig. 2.

Stat. 299. Buka- or Cyrus-bay, South coast of Rotti-island. 34 M. Mud, coral and Lithothamnion. 1 Spec.

The spire of the only specimen is broken, so the shell has only 4 whorls and the identification is somewhat doubtful.

3. Cithara stromboides Reeve.

REEVE. Proc. Zool. Soc. Lond. 1846, p. 63. — Conch. Ic. Vol. III, Mangelia, fig. 33. TRYON. Man. of Conch. Vol. VI, p. 264, Pl. 23, fig. 1.

Stat. 37. Sailus kctjil, Paternoster-islands. 27 M. and less. Coral and coralsand. 1 Spec.

4. Cithara lyrica Reeve.

REEVE. Proc. Zool. Soc. Lond. 1846, p. 61. — Conch. Ic. Vol. III, Mangelia, fig. 20. TRYON. Man. of Conch. Vol. VI, p. 268, Pl. 24, fig. 21. SMITH. Zool. Coll. "Alcrt", p. 41, Pl. 4, fig. H (cylindrica var.).

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Stat 133. Linung, Salibabu-island, Up to 36 M. Mud and hard sand, 1 Spec.

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Solut, who unites this form to *C. cylindrica*, has given (I. c.) a full description and fine figures as the only specimen belongs no doubt to the broad var. *lyrica*, I have recorded it with this specific name.

5. Cithara lyra Reeve.

REFVE, Proc. Zool. Soc. Lond. 1846, p. 59. — Conch. Ic. Vol. III, Mangelia, fig. 3. TKVON, Man. of Conch. Vol. VI, p. 257, Pl. 24, fig. 14 (*citharella* var.).

Stat. 213. Saleyer, Reef. 1 Spec.

The specimen has 9 beadlike teeth on the interior of peristome and 9 wrinkles on the columella, of which the lower ones are likewise beadlike, but Mr. SMITH writes me that this is sometimes the case; perhaps it depends on age.

#### Lienardia Jousseaume.

1. Lienardia Aliciae Melvill & Standen.

MELVILL & STANDEN. Journ. of Conch. 1895, p. 95, Pl. 2, fig. 15.

HEDLEY. Proc. Linn. Soc. N. S. Wales, 1909, Vol. 34, p. 454, Pl. 43, fig. 88.

Stat. 43. Pulu Sarassa, Postillon-islands. Up to 36 M. Coral. 1 Spec.

Stat. 99. North-Ubian. 16-23 M. Lithothamnion-bottom. 1 Spec.

Stat. 164. 1°42'.5 S., 130°47'.5 E. Near West New-Guinea. 34 M. Sand, small stones and shells. 1 Spec.

Differing in size, but agreeing in other particulars with specimens received of Mr. TOMLIN from Lifu and with the fine figure of HEDLEY. I have employed the generic name *Lienardia* instead of *Glyphostoma*, for the reasons emitted by BOETTGER (Nachrichtsbl. der Deutschen Mal. Gesellsch, 1895, p. 49).

2. Lienardia spurca Hinds.

HINDS, Moll. Voy. "Sulphur", p. 17, Pl. 5, fig. 14. REEVE. Conch. Ic. Vol. I, Pleurotoma, fig. 312. TRVON. Man. of Conch. Vol. VI, p. 273, Pl. 15, fig. 37. SMITH. Zool. Coll. "Alert", p. 39, Pl. 4, fig. F, F 1.

 Stat. 51. Madura-bay. 69—91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec.
 Stat. 285. Near South coast of Timor. 34 M. Limit between mud and coral. Lithothamnion. 1 Spec.

Stat. 303. Haingsisi, Samau-island. 36 M. Lithothamnion. 1 Spec.

The specimen from Stat. 51 is very small but characteristic, that from Stat. 285 is large 114 Mill. and remarkable for numerous fine spirals between the principal ones. If constant, this form should deserve a varietal name. Though REEVE makes no mention of it, his figure seems to be magnified, for SMITH (l. c.) records a specimen of 18 Mill., which "considerably cleeceds the dimensions of HINDS' type, another of 12 Mill. in length; REEVE's figure nearly reaches 23 Mill., his *Pl. rava*, (l. c. fig. 250) which according to SMITH, should be a synonym,

being magnified to twice its natural length, likewise nearly 23 Mill., is consequently only a little more than 11 Mill.

3. Lienardia granulifera n. sp. Pl. XXIX, fig. 3.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. I Spec.

Shell fusiform, with pyramidal spire and short canal, strong, dark red-brown, with a yellowish zone on last whorl, quite covered by the suture in upper whorls and with whitish apex. Whorls  $9^{1/2}$ ; nucleus consisting of 2 convex, light brown whorls, of which the upper one is smooth and shining, the second has a prominent keel; of the post-nuclear whorls, nearly 2 are whitish, the whorls are convex, separated by a deep, waved suture, ascending towards the aperture. Sculpture consisting of rounded ribs, 11 in number on last whorl, that preceding the peristome very strong, and spiral lirae on the whole shell, 10 in number on penultimate whorl, about 30 on last whorl and canal, of which 5 below the suture more crowded and fainter, 5 on the median part of ribs (6 on last whorl) are prominent and eventually a few intermediate very faint ones; moreover faint growth-lines are visible and the whole shell except the nucleus is covered with close-set, flattened granules. Aperture oblong, with a deep, narrow sinus, slightly wider and rounded at its top, narrowed by a thick, incurved, enamellous, white rim on the body-wall; peristome strong, serrated by small denticles, about 9 in number and intermediate ones, only visible on the internal side and a second row of about 9 whitish tubercles, a little more in the interior; columellar margin lighter coloured than shell, nearly straight, with 7 transverse folds. Interior of aperture smooth, light violet. Canal straight, narrow at its proximal end, wider below.

Alt.  $13^{1}/_{2}$ , lat.  $5^{1}/_{4}$ ; apert. alt.  $5^{1}/_{2}$ , lat.  $1^{1}/_{2}$  Mill.

Still allied to L. *spurca* by its characters of aperture, especially by the sinus and by the arrangement of its spirals, but quite peculiar by its granular sculpture.

4. Lienardia peristernioides n. sp. Pl. XXIX, fig. 4.

Stat. 51. Madura-bay. 69—91 M. Fine grey sand, coarse sand with shells and stones. 1 Spec. Stat. 260. Near North point of Nuhu Jaan, Kei-islands. 90 M. Sand, coral and shells. 2 Spec.

Shell ovately fusiform, with rather short spire and short canal, strong, whitish, light reddish-brown between the ribs, especially below the suture and a faint band of the same colour below the periphery of last whorl. Whorls 9, of which 3 form a brownish nucleus, with convex whorls, the two lower ones are keeled. Post-nuclear whorls short, convex, with a deep, waved suture; sculpture consisting of rounded axial ribs, 11 or 12 in number on last whorl, crossed by more or less thick spirals, 7 narrow ones below suture, followed by six coarser ones on penultimate whorl, about 28 on last one, besides a few intermediate lirae; moreover the shell is covered with excessively fine spiral lines, which, under the microscope, prove to be composed of rows of granules, much finer than in the preceding species. Aperture oval, with a rather narrow, deep sinus above and a short, open canal below; peristome strong, subserrated and internally with a few denticles, being the ends of internal lirae; columellar margin concave above,

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straight below, with a tubercle and rim above, bordering and rendering narrow the sinus, and until o shorter and longer folds; interior of apertural margins more or less stained with reddish-brown.

Ah. 13, lat. 612; apert. alt. 51/2, lat. 1/6 Mill.

Mlied to the preceding species, but more ventricose, with much finer granular sculpture and different colour; it is still more remote from *L. spurca*. The measurements are taken from the largest specimen from Stat. 51; the largest one from Stat. 260 has a length of  $9^{1}/_{2}$  Mill., but otherwise agrees in every essential character; the smallest specimen has a length of  $8^{1}/_{2}$ , a breadth of 3. Mill, and is consequently more slender. In colour it resembles some species of *Peristernia*.

#### 5. Lienardia rugosa Mighels?

MIGHELS, Proc. Bost. Soc. Nat. Hist., Vol. 11, 1845, p. 23. TRYON, Man. of Conch. Vol. VI, p. 297, Pl. 19, fig. 57.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. I Spec.

This specimen is a dead, somewhat worn shell of small size (length  $5^{1}/_{2}$  Mill.), its identification consequently a little doubtful.

#### Clathurella Carpenter.

1. Clathurella philippinensis Reeve.

REEVE. Proc. Zool. Soc. Lond. 1843, p. 184. — Conch. Ic. Vol. 1, Pleurotoma, fig. 109. TRYON. Man. of Conch. Vol. V1, p. 287, Pl. 16, fig. 81.

Stat. 133. Lirung, Salibabu-island. Reef. 1 Spec.

#### 2. Clathurella cavernosa Reeve.

REEVE. Proc. Zool. Soc. Lond. 1845, p. 118. —— Conch. Ic. Vol. 1, Pleurotoma, fig. 303. TRYON. Man. of Conch. Vol. V1, p. 290, Pl. 17, fig. 10.

Stat. 114. Kwandang-bay-entrance, 75 M. Hard sand, very fine, 2 Spec. Stat. 116. West of Kwandang-bay-entrance, 72 M. Fine sand with mud. 1 Spec.

The specimen from Stat. 116 and one from Stat. 114 have their normal length of about 6 Mill., the other one from Stat. 114, of 8 Mill. and approaches in this respect *Cl. spelacodea* Herv. Journ. de Conch. 1897, p. 98, Pl. 2, fig. 4); as the specimens are bleached, I cannot clearly see the colour, but the whorls are more angular than in HERVIER's figure, and agree in this respect with that of REEVE.

3. Clathurella Polyhymnia Melvill.

MELVILL. Proc. Mal. Soc. Lond. Vol. VI, 1905, p. 165, Pl. 10, fig. 17. Stat. 105. 6 8 N., 121° 19 E. Sulu-archipelago. 275 M. Coralbottom. 1 Spec.

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The Siboga-specimen is slightly more ventricose than a Gulf of Oman-specimen, which Mr. MELVILL kindly sent me for comparison; the sculpture seems to be a little stronger, the outer lip is more developed; this latter may depend on age, otherwise the shell is so much the same, that its differences may be individual, so I have not applied a varietal name to this unique specimen.

#### 4. Clathurella japonica Melvill.

MELVILL. Proc. Mal. Soc. Lond. Vol. I, 1895, p. 227, Pl. 14, fig. 11.

Stat. 51. Madura-bay. 69-91 M. Fine grey sand, coarse sand with shells and stones. I Spec.

The specimen has the peristome not developed. Mr. MELVILL, to whom I owe the identification of this doubtful specimen, says that it seems to agree in all essential features.

5. Clathurella virgo n. sp. Pl. XXIX, fig. 5.

Stat. 100. 6° 11' N., 120° 37'.5 E. Sulu-archipelago. 450 M. Dead coral. 1 Spec.

Shell ovate, with short canal, thin, pellucid, white. Whorls 6, of which 2 convex ones form the nucleus, which is microscopically, spirally lirate and crossed by still finer axial striae, which make the apex cancellated; post-nuclear whorls very convex, separated by a deep suture, accompanied by an excavation of the upper part of whorls. Sculpture consisting of rounded axial ribs, narrower than the interstices, 19 in number on last whorl, ending at the excavation, not reaching the base of last whorl, and rather sharp, spiral lirae, 10 in number on penultimate whorl, besides a few much fainter ones in the excavation; moreover very fine growth-lines, stronger in the excavation and extremely fine granules, cover the whole shell. Aperture oval, angular above, below with a short, wide canal; peristome thin, with a rather shallow sinus, columellar margin concave above, directed to the left along the canal, covered with a thin layer of enamel; interior of aperture smooth.

Alt.  $7^{3}/_{4}$ , lat. 4; apert. alt.  $4^{1}/_{4}$ , lat.  $1^{1}/_{2}$  Mill.

This fine species has no conspicuous features, it is a typical deepwater form, the sculpture of the apex however is peculiar.

6. Clathurella rufoapicata n. sp. Pl. XXIX, fig. 6.

Stat. 178. 2°40' S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 1 Spec.

Shell ovate, with short canal, thin, pellucid, white, with rufous apex. Whorls about  $7^{1}/_{2}$ , (uppermost top damaged) of which about  $3^{1}/_{2}$  form the rufous nucleus, which is angular by a strong keel, and crossed by axial riblets; post-nuclear whorls very convex, with a deep suture and an excavation below it; sculpture consisting of rounded, axial ribs, narrower than the interstices, 18 in number on last whorl, ending at the excavation and disappearing on base of last whorl, and spiral lirae, of which 4 principal ones on penultimate whorl, which make the ribs slightly tubercled, and a few finer ones in the excavation and in many of the interstices; moreover fine

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growth lines, strong in the excavation are visible. Aperture roundedly oval, bluntly angular above, below with a rather narrow, short canal; peristome broken, probably with a shallow sinus above, according to growth lines), columellar margin concave above, then straight, directed to the left along the canal.

. Mt. 7 ., lat.  $3^{1}_{2}$ ; apert. alt.  $3^{2}/_{5}$ , lat.  $1^{1}/_{2}$  Mill.

Though this species resembles in shape the preceding one, its whorls are more convex, the number of spirals is much less, but above all, the comparison of the apical whorls excludes any idea that the two forms possibly might be identical. Though the specimen is not complete, its peculiar characters of the nucleus may justify its naming and describing it.

#### Daphnella Hinds.

1. Daphnella Euphrosyne Melvill & Standen.

MELVILL & STANDEN, Ann. Mag. Nat. Hist. Ser. 7, Vol. XIII, 1903, Pl. 23, fig. 12.

Stat. 204. Between islands of Wowoni and Buton, northern entrance of Buton-strait. 75-94 M. Sand with dead shells. 2 Spec.

1 owe the identification of these specimens, which are not quite developed, to Mr. MELVILL.

2. Daphnella aurcola Reeve.

REEVF. Proc. Zool. Soc. Lond. 1845, p. 113.
— Conch. Ic. Vol. I. Pleurotoma, fig. 212.
TRYON. Man. of Conch. Vol. VI, p. 302, Pl. 26, fig. 77.

Stat. 315. East of Sailus Besar, Paternoster-islands. Up to 36 M. Coral and Lithothamnion. 1 Spec.

This specimen is likewise young.

3. Daphnella supracancellata n. sp. Pl. XXIX, fig. 7.

Stat. 114. Kwandang-bay-entrance. 75 M. Hard sand, very fine. 1 Spec.

Shell elongately-fusiform, with long, slender spire and short canal, strong, yellowish-grey. Whorls 11, of which about 3 form a convexly-whorled nucleus, with the common criss-cross lines; post-nuclear whorls slightly convex, separated by a linear, indistinct suture, bordered by a narrow excavation. Sculpture consisting of rounded ribs, on a little more than 4 following whorls, disappearing on lower whorls; they are all crossed by spiral lirae, 9 in number on penultimate whorl, of which one borders the suture, another the excavation, about 30 on last whorl and canal, besides a few intermediate ones on this last whorl, scarcely appreciable on the upper ones; these lirae produce a cancellation on the upper 4 post-nuclear whorls (hence the name); moreover there are numerous finer spiral lines between the principal ones, making the whole shell spirally striated, crossed by more or less conspicuous growth-striae, strongly in [sel] at intervals, closer on last part of last whorl, making the principal lirae nearly beaded.

Aperture oblong, narrow above, at the rather deep sinus and below at the canal; peristome rather strong, much contracted at the limit of canal, interiorly with short grooves, corresponding to the lirae and subdenticulate in the interstices of these grooves, columellar margin slightly concave above, then nearly straight, with a thin layer of enamel, which is faintly multiplicate. Interior of aperture smooth, bluish white, the peristome bordered by a greyish zone.

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Alt.  $23^{3}/_{4}$ , lat. 6; apert. alt.  $10^{1}/_{2}$ , lat 2 Mill.

This fine species reminds *D. Ceciliae* Melv. & St. (Proc. Zool. Soc. Lond. 1901, p. 447, Pl. 24, fig. 13), but is larger, much more elongate and different in many particulars of sculpture, also in colour.

4. Daphnella elegantissima n. sp. Pl. XXIX, fig. 8.

Stat. 310. 8° 30' S., 119° 7'.5 E. Flores-sea. 73 M. Sand with few pieces of dead coral. 1 Spec.

Shell ovately-fusiform, with sharp spire and short canal, moderately strong, yellowish, with a faint red-brown band at the base of last whorl. Whorls 9, of which about  $1^{1}/_{2}$  form a nucleus with obscure sculpture, post-nuclear whorls convex, separated by a linear suture, with a slight excavation below it. Sculpture consisting of remote, rounded ribs, 10 in number on penultimate whorl, stronger on the upper ones, and numerous, raised, axial striae, as well on the ribs as in the interstices; this sculpture is crossed by numerous spiral lirae, which are fainter in the excavation and of which some, (4 on penultimate whorl) are stronger; in crossing the ribs these stronger lirae produce tubercles, strongest on upper whorls, nearly disappearing on last one; by this sculpture the whole shell has a coarse cancellation, with a finer intermediate one. Aperture subquadrangular, with a rather narrow sinus, comparatively deep for the genus; peristome but slightly convex above, suddenly roundedly contracted below, forming an angle with the canal, which is short and wide; columellar margin concave at its upper part, then nearly straight, with a thin layer of enamel. Interior of aperture smooth, its margin with short grooves, corresponding to the lirae, base of interior and interior of canal faintly red-brown.

Alt.  $15^{1}/_{4}$ , lat.  $5^{1}/_{2}$ ; apert. alt. 7, lat. 2 Mill.

This species, which has a very fine sculpture, is, according to Mr. SMITH, allied to but not identical with *D. elegans* Pse., a species quite unknown to me. Its characters much remind those of *Clathurella*; without Mr. SMITH's advice, I should have located it in that genus.

5. Daphnella celebensis n. sp. Pl. XXIX, fig. 9.

Stat. 71. Makassar and surroundings. Up to 32 M. Mud, sand with mud, coral. 1 Spec.

Shell ovately-fusiform, with very short canal, strong, yellowish-grey, with a few of the lirae reddish-brown. Whorls 9 or 10, (topmost one broken) of which the upper one is nearly smooth, but with traces of criss-cross lines. Post-nuclear whorls convex, slightly angular at some distance from the deep, crenulated suture. Sculpture consisting of numerous axial riblets, 32 on penultimate whorl, crossed by numerous spirals, 10 on penultimate whorl, of which the upper one, bordering the suture, is finely crenulated by the upper ends of ribs and finely spirally

striate l, one of the brac at the shoulder is the most prominent and makes the whorls angular, the other ones are subequal, with, in many cases, intermediate lirac; on the points of intercrossing the ribs are beaded; moreover the whole shell is covered with growth-lines. Aperture oblong, with a shallow sinus above, and a very short, wide canal below; peristome strong, crenulated, arched, below with a small sinus at the limit of canal, interiorly with short grooves, columellar margin slightly concave above, with a thin layer of enamel.

Alt. 16<sup>1</sup>, lat. 5; apert. alt. 7, lat. 2 Mill.

This fine species resembles in shape and colour *D. hyalina* Reeve (Conch. Ic. Pleurotoma, fig. 200), but is quite different by its relatively strong, cancellated sculpture.

6. Daphnella subuloides n. sp. Pl. XXIX, fig. 10.

Stat. 105. 6°8 N., 121° 19 E. Sulu-archipelago. 275 M. Coralbottom. 1 Spec.

Shell fusiform, with short canal, rather solid, yellowish, with irregular, faint, red-brown streaks. Whorls probably 8 (uppermost whorl wanting) of which a nuclear one is convex, with faint, partly interruptes riblets. Post-nuclear whorls convex, separated by a linear, faintly waved suture, accompanied by a narrow excavation, with a few faint lirae; lower part slightly angular at limit of excavation, cancellated by numerous, narrow ribs, about 18 in number on penultimate whorl, crossed by spirals of nearly equal strength, 9 in number on penultimate whorl, which make the ribs beaded in crossing them; moreover intermediate lirae and crowded growth-striae produce a micro-cancellation. Aperture oblong, with a narrow, rather deep sinus above; peristome blunt, slightly arched and crenulate, strongly contracted below and forming a blunt angle at the limit of canal, exteriorly with a rounded varix, bearing 3 of the ribs, interiorly with a few short lirae, of which those bordering the upper sinus and limit of canal are stronger. Columellar margin slightly concave above, nearly straight below, with a thin layer of enamel and a strong tubercle at the entrance of upper sinus. Interior of aperture light brown, with a white margin.

Alt. 13, lat.  $4^{1}_{,s}$ ; apert. alt.  $6^{1}_{/_{2}}$ . lat.  $1^{1}_{/_{2}}$  Mill.

This species is allied to *D. subula* Reeve, but according to Mr. SMITH, who compared it with the type, differing by a longer canal, shorter whorls etc. It has likewise in my opinion much resemblance with *Clathurella*.

7. Daphnella supercostata Smith.

SMITH. Ann. Mag. Nat. Hist. Ser. 5, Vol. X, 1882, p. 301.

Stat. 47. Bay of Bima, near South fort. 55 M. Mud with patches of fine coralsand. 1 Spec. Originally described from Japan.

8. Daphnella suluensis n. sp. Pl. XXIX, fig. 11.

Stat. 105. 6°8 N., 121° 19 E. Sulu-archipelago. 275 M. Coral-bottom. 1 Spec.

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Shell elongately oval, with short canal, solid, yellowish-white, brownish behind peristome.

Nucleus wanting, remaining whorls nearly 7, convex, separated by a deep, undulated suture. Sculpture consisting of remote, rounded, axial ribs, more conspicuous on upper whorls, nearly disappearing on last one, 18 in number on penultimate whorl and conspicuous growth-lines on ribs and interstices; the whole shell is crossed by unequal spirals, of which about 5 on penultimate one are more prominent. Aperture subquadrangularly oval, with a blunt angle above and a short, wide canal below; peristome moderately thin, undulated, with a shallow sinus just below suture, angular at the entrance of canal; columellar margin nearly straight in its lower part. Interior of aperture light brownish, with a bluish tint in the depth.

Alt.  $16^{1}/_{4}$ , lat.  $6^{1}/_{4}$ ; apert. alt.  $7^{1}/_{2}$ , lat.  $2^{3}/_{4}$  Mill.

Allied to *D. albibalteata* Reeve (Conch. Ic. Pleurotoma, fig. 84), but the new species is much more slender, the whorls are less convex, more elongated, the ribs, especially on last whorl, are much fainter and I see no trace of the white belt in the new species.

9. Daphanella perfragilis n. sp. Pl. XXIX, fig. 12.

Stat. 76. 4° 22'.1 S., 118° 16'.9 E. Makassar-strait. 2029 M. Fine grey mud. 1 Spec. Stat. 178. 2° 40' S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 1 Spec.

Shell fusiform, with moderately long canal, very thin, fragile, hyaline, white. Whorls 8, of which about  $2^{1}/_{2}$  form the nucleus, with convex whorls and criss-cross sculpture. Post-nuclear whorls convex, separated by a deep, linear suture, the upper ones are strongly angular at the shoulder, the angle however is fainter on lower whorls and nearly disappears on last one; a second prominent liration is visible on upper whorls, but becomes likewise fainter, moreover the shell is crossed by numerous, fine, raised, spiral striae and finer axial ones, producing a fine cancellation; on the canal the spirals are stronger. Aperture oval, angular above, with a rather short, moderately wide canal below; peristome broken, according to growth-lines with a shallow sinus above, roundedly-angular at the entrance of canal. Columellar margin convex at the body whorl, then nearly straight, slightly curved to the left, with a thin layer of enamel.

Alt.  $18^{1}/_{2}$ , lat.  $7^{1}/_{2}$ ; apert. alt.  $9^{3}/_{4}$ , lat. about 3 Mill.

Allied to *D. dca* Melv. (Proc. Mal. Soc. Lond. Vol. VI, p. 167, Pl. 10, fig. 24), but the new shell is much larger, the canal is longer and I see nothing of the angularity of whorls, neither in the description nor in the figure; the specimen from Stat. 76 is a younger, worn shell, but still conspicuously angular.

#### Pleurotomella Verrill.

Under this name I have united some shells, which agree in having a dark nucleus, sculptured with criss-cross lines, strongly contrasting with the rest of the shell; this group has been united as a section of *Mangilia* and of *Daphnella* by DALL and by TRYON. DALL, in 1908 gives generic rank to *Pleurotomella*, but unites *Gymnobela* as a subgenus, for species with short spire, smaller than the average *Pleurotomella* and erects a new group *Phymorhynchus* on characters of the animal. As the Siboga-specimens contain no soft parts, I am unable to state if the animals are blind, as *Pleurotomella* ought to be, nor if they have the shape of

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- 1. Plearotomella biconica n. sp. Pl. XXIX, fig. 13.
  - Stat. 150. 0 20.2 S., 130° 5.3 E. Near Waigeu-island, 469 M. Coarse sand and broken shells. 1 Spec.

Shell biconical, rather strong, white. Whorls 9, of which 4 form a yellowish-brown nucleus, with moderately convex whorls, of which about 2 upper ones smooth, 2 with curved, raised striae, stronger just below the suture, crossed in their lower part by very fine, oblique striae. Subsequent whorls angular, the upper part slightly excavated, basal part nearly straight in outline; this lower part has rather inconspicuous axial ribs, nearly disappearing in last whorl, tubercled at the angle below the excavation; otherwise the axial sculpture consists of rather strong, nearly rib-like, much curved, raised striae in the excavation and very fine growth-lines; of spirals there are 4 on penultimate whorl, below and besides that accompanying the peripheral angle, and numerous spirals on last whorl, with eventually intermediate ones; moreover the shell is covered with excessively small granules, only visible under a strong lens. Last whorl at first convex below angle, then moderately contracted. Aperture oblong, with a sharp angle above and a compressed, gutter-like canal below; peristome broken, sinus, judging after growth-lines, large but shallow, occupying the excavated space; columellar margin with a rather strong layer of enamel, strongest at the short canal, where it forms an oblong umbilical pit.

Alt.  $10^{1}/_{4^{2}}$  lat.  $4^{1}/_{4^{2}}$  apert. alt. 5, lat.  $1^{5}/_{4}$  Mill.

2. Pleurotomella affinis n. sp. Pl. XXX, fig. 1.

Stat. 178. 2°40 S., 128° 37.5 E. Ceram-sea. 835 M. Blue mud. 1 Spec.

Shell biconical, thin, white. Whorls about 10, of which about 4 form a red-brown nucleus, with convex whorls, of which about  $1^{1}/_{2}$  upper ones smooth, the other ones with angular riblets, strongest near upper suture, crossed in their lower part by fine, oblique striae. Subsequent whorls with a broad, concave upper part and a much narrower lower part. The sculpture consists of 2 conspicuous spirals, just below the suture, less distinctly developed on last whorl, 5 much fainter ones in the excavation: this latter is bordered by a rather strong keel, which makes the whorls angular: moreover a second keel at some distance, with 2 faint intermediate ones on penultimate whorl; the part below the excavation on last whorl is lirate over its whole surface. The upper, excavated part of whorls is crossed by rather distant curved riblets, which, in crossing the infrasutural lirae, produce small beads. At last the whole shell is covered with fine growth-striae and excessively fine granules. Last whorl convex, strongly attenuated towards its base. Aperture obliquely oblong, sharply angular above, ending below in a short, compressed, gutter-like canal; peristome broken, probably with a wide, shallow sinus, columellar margin concave, with a thin layer of enamel.

Alt. o. lat.  $3^{1}/_{1}$ ; apert. alt.  $3^{3}/_{1}$ , lat.  $1^{1}/_{2}$  Mill.

This species is no doubt nearly allied to the preceding one, but differs in shape, being

more attenuated towards its base and considerably in sculpture, as will be seen by comparing the descriptions.

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3. Pleurotomella gradata n. sp. Pl. XXX, fig. 2.

Stat. 159. 0° 59'.1 S., 129° 48'.8 E. Halmahera-sea. 411 M. Coarse sand. I Spec.

Shell fusiform, gradate, moderately strong, white. Whorls 8 (uppermost broken), of which 2 form a reddish-brown nucleus, with convex whorls (their number probably will have been 4 of which 2 are wanting), sculptured by curved riblets, crossed by oblique finer ones in the lower part, which is consequently finely reticulated. Subsequent whorls convex, angular, gradate by a conspicuous excavation of the upper part, lower part perpendicular. Spirals consisting of a keel and a few, rather strong, slightly flattened lirae on the lower part, 4 in number on penultimate whorl and 2 narrow ones at the base of excavation, just above the keel; last whorl with numerous stronger, flat lirae, eventually divided by a very fine groove, and some intermediate ones. The axial sculpture consists of numerous fine growth-striae and curved riblets in the upper part of excavation, less pronounced on last whorl, not quite extending to the keel. Last whorl convex, regularly attenuated towards the rather long canal. Aperture elongate, angular above, ending in a long, gutter-like canal below. Peristome broken, probably with a moderately wide, shallow sinus. Columellar margin concave, with a rather strong layer of enamel along the canal.

Alt.  $10^{1}/_{2}$ , lat.  $4^{1}/_{4}$ ; apert. alt.  $5^{1}/_{2}$ , lat.  $1^{1}/_{2}$  Mill.

Still allied to the preceding 2 species, but less biconical in shape, with more slender canal and very different in particulars of sculpture.

4. Pleurotomella ceramensis n. sp. Pl. XXX, fig. 3.

Stat. 178. 2°40' S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 2 Spec.

Shell shortly fusiform, transparently white. Whorls 8, of which 4 form a yellowish-brown nucleus, with convex whorls, the uppermost broken, the other ones with curved riblets, crossed by oblique, slightly finer ones, over a large part of their breadth. Subsequent whorls rather convex, angular, with a broad, excavated, upper part, a rather narrow, nearly straight, lower part, this lower part with narrow, obtuse, axial ribs, occupying also the lower part of excavation, about 17 in number on last whorl, where they are fainter near aperture; these ribs are crossed by 2 strong spirals on upper 2 whorls, 3 on penultimate and numerous ones on last whorl, the upper spiral forming a keel, which is tuberculiferous by the intercrossing of the ribs; moreover there are fainter spirals in some of the interstices and just above the keel, in the basal part of excavation, 3 in number in penultimate whorl; the excavation is crossed by curved riblets or plicae in its upper part, and the whole shell is covered with fine growth-striae. Last whorl regularly attenuated below, with a rather short canal. Aperture angular above and at the end of keel, with a probably shallow sinus, below the suture; peristome broken; columellar margin with a thin layer of enamel; canal a little broken, probably gutter-like.

Alt.  $6^{1}/_{4}$ , lat. 3; apert. alt.  $3^{1}/_{2}$ , lat.  $1^{1}/_{4}$  Mill.

SIBOGA-EXPEDITIE XLIX<sup>1</sup> e.

This species, according to Mr. MrI.vIII, is allied to *D. enlimenes* Melv. (Journ. of Mal. 1004, Vol. XI, p. 84, Pl. 8, fig. 15), but different; the Siboga-shell is considerably less slender, more angular, the excavation is much larger and the sculpture coarser.

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5. Pleurotomella clathurellacformis n. sp. Pl. XXX, fig. 4.

Stat. 178. 2 40 S., 128° 37.5 E. Ceram-sea, 835 M. Blue mud. 2 Spec.

Shell elongately-fusiform, thin, transparent, white. Whorls about 9, of which about 3 form a reddish-brown nucleus, composed of convex whorls, with riblets in different directions, but the nucleus being rather worn, the sculpture is not prominent. Subsequent whorls convex, with a narrow, excavated part below the deep suture; the excavation is crossed by numerous, slightly curved, axial riblets. The convex part of whorls is sculptured by strong, rounded, oblique, axial ribs, 11 in number on last whorl, crossed by strong spirals, 6 in number on penultimate whorl, of which 4 are stronger and are especially prominent on the crest of axial ribs; these ribs disappear on the base of last whorl, which, as well as the rather short canal is lirate. Aperture oval, angular above, ending below in a rather narrow, slightly curved, compressed canal; peristome thin, with a narrow, shallow sinus above; columellar margin concave, with a thin layer of enamel, directed to the left near the canal.

Alt.  $8^{1}/_{4}$ , lat. 3; apert. alt.  $3^{1}/_{4}$ , lat. 1 Mill.

As the nucleus was not in perfect condition, the generic position seemed to be somewhat doubtful, but the contrast in colour, between nucleus and rest of shell, the riblets below the suture and other characters it has in common with the preceding species, have at last given the decision.

### 6. Pleurotomella extensacformis n. sp. Pl. XXX, fig. 5.

Stat. 212. 5° 54.5 S., 120 19'.2 E. Banda-sea. 462 M. Fine grey and green mud. 1 Spec.

Shell ovate, with short spire, rather strong, ivory-white. Whorls 8 or 9 (upper part eroded of which 3 (or 4) form a reddish-brown, convexly-whorled nucleus, of which about 2 lower ones are sculptured by slightly curved riblets, crossed in their lower part by fine, oblique striae. Subsequent whorls scarcely excavated, the place of the excavation being occupied for a great deal by a rather strong, subsutural spiral, adorned by strong, laterally compressed beads, 22 in number on last whorl; below this spiral remains a rather large groove. Basal part of whorls with narrow, a little oblique ribs, 15 in number on last whorl, ending below the groove in short tubercles, which are connected by a second spiral; the space between the ribs is sculptured by fine and coarse growth-lines and faint spiral striae, becoming stronger and groovelike towards the base of last whorl, and have the character of lirae on the short, large canal; last whorl regularly convex, until the canal. Aperture oval, with a moderately sharp angle above and a wide, slightly gutter-like canal below; peristome broken, probably with a very shallow finus judging after growth-lines]; columellar margin with a thin layer of enamel, concave. Canal directed to the left.

. Alt.  $\frac{1}{2}$ , lat.  $\frac{1}{4}$ ; apert. alt.  $\frac{3}{4}$ , lat.  $\frac{1}{2}$  Mill.

This species is very peculiar, it has some resemblance with *Pleurotomella (Gymnobela) extensa* Dall (Bull. Mus. Comp. Zool. Vol. XVIII, 1889, p. 126, Pl. 10, fig. 2), but differs much by the spiral sculpture, which seems not to exist in that species, which is moreover more slender.

7. Pleurotomella abbreviata n. sp. Pl. XXX, fig. 6.

Stat. 178. 2°40' S., 128° 27'.5 E. Ceram-sea. 835 M. Blue mud. 2 Spec.

Shell small, shortly biconical, thin, transparently white. Whorls about 8 (nucleus slightly eroded), of which 4 form a brownish (bleached) nucleus, of apparently the same character as in the preceding species. Subsequent whorls (excepted last one), practically existing only of the excavation, which is sculptured by curved, raised striae and is bordered, just below the suture, by a conspicuous, spiral liration, with laterally compressed, fold-like beads, becoming fainter towards the aperture, and, just above the suture, a second row of depressed, slightly pointed tubercles, forming a keel below the excavation of last whorl, about 12 in number on that whorl, where they form the top of short, oblique, axial ribs; lower part of last whorl, with about 15 lirae and a few intermediate ones. Moreover fine growth-striae and excessively small granules are visible on the whole shell, by the aid of a strong lens; last whorl regularly attenuated towards its base, only slightly convex, with a very short, broad canal. Aperture obliquely oblong, with a sharp angle above and a narrow gutter-like canal below; peristome thin, with a wide, noderately deep sinus above; columellar margin slightly concave above, straighter and directed to the left along the canal, with a thin layer of enamel, thicker below.

Alt. 6, lat.  $3^{1}/_{4}$ ; apert. alt. 3, lat. 1 Mill.

This species is quite different from any of the preceding or elsewhere known ones by its shape and sculpture.

### 8. Pleurotomella pyriformis n. sp. Pl. XXX, fig. 7.

Stat. 178. 2°40'S., 128° 37'.5 E. Ceram-sea. 835 M. Blue mud. 1 Spec.

Shell pyriform, with acute spire, ivory-white, thin, fragile. Whorls 8, of which 4 form a light-brown nucleus, with convex whorls, remote riblets on the upper part, oblique, and less stronger ones, which cross each other, in the lower part. Subsequent whorls scarcely convex, with only a trace of being divided into 2 parts on the upper two; however, the upper part is marked with elegantly curved, conspicuous riblets, being slightly bead-like just below the suture, on a narrow, infrasutural spiral; lower part of last whorl, with numerous, faint, spiral striae, stronger on the rather long, slender canal; moreover the lower whorls display elegantly waved growth-lines. Aperture oval, with a sharp angle above and a narrow gutter-like canal below, which is directed to the right. Peristome much broken, probably with a wide, shallow sinus above; columellar margin with a very thin layer of enamel, slightly stronger along the canal.

Alt.  $7^{1}/_{2}$ , lat.  $3^{3}/_{4}$ ; apert alt.  $4^{3}/_{4}$ , lat.  $1^{1}/_{2}$  Mill.

The generic position of this shell seems to be somewhat doubtful, but the characters

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of spire and aperture agree with those of the preceding ones, the sculpture is likewise more in accordance with the present genus, than with *Daphnella*.

9. Pleurotomella dubia n. sp. Pl. XXX, fig. 8.

Stat. 178. 2 40 S., 128° 37.5 E. Ceram-sea. 835 M. Blue mud. 2 Spec.

Shell fusiform, transparently white, thin. Whorls about 0, of which about 3 form a reddishbrown nucleus, with crossed riblets. Subsequent whorls angular, the upper part excavated, with remote, faint, axial plicae below the suture, nearly lacking in last whorl; lower part with rounded, more or less oblique ribs, ending above, just below the excavation, in bluntly pointed tubercles, 13 or 14 on last whorl, otherwise this lower part is smooth, but for numerous growth-striae and a few, scarcely appreciable, spiral striae: near the base of last whorl however and especially on the rather long, narrow canal, numerous spirals make their appearance. Aperture elongately ovate, with a sharp angle above, a narrow gutter-like canal below; peristome thin (broken), according to growth-lines with a wide, shallow sinus above; columellar margin rather straight, with a thin layer of enamel.

Alt.  $16^{3}/_{4}$ , lat.  $6^{1}/_{2}$ ; apert. alt.  $8^{1}/_{4}$ , lat.  $2^{8}/_{4}$  Mill.

Alt.  $14^{1}/_{2}$ , lat.  $5^{1}/_{2}$ ; apert. alt.  $7^{1}/_{3}$ , lat. 2 Mill.

The smallest specimen is in the best condition and has served for description, the largest one has the aperture less angular, which may be caused by having been broken and repaired; the characters are not very prominent, but the species is certainly different from the former ones.

#### var. circumstriata n. var.

From the same locality, a heavily broken shell, with the lower half of whorls spirally grooved, 7 grooves on penultimate whorl, has been dredged; the specimen is larger, but otherwise I see no differences of much importance, the more so, as the two specimens of the type are even not perfectly identical; as a large portion of last whorl is broken away, the shell appears to be much more slender, but if complete, this difference would disappear for a good deal, so I preferred to mention it only as a variety; the nucleus, though eroded, allows to trace the characteristic sculpture; length 2.4 Mill.

### Spergo Dall.?

### 1. Spergo Sibogae n. sp. Pl. XXX, fig. 9.

Stat. 262. 5° 53.8 S., 132° 48'.8 E. Near Kei-islands. 560 M. Solid bluish grey mud. 1 Spec.

Shell fusiform, rather strong, yellowish-brown. Nucleus wanting, remaining whorls 9, moderately convex, slightly excavated below the conspicuous but shallow suture. Sculpture consisting of remote, oblique, axial ribs, conspicuous in upper whorls, fainter lower on, disappearing on back of last whorl, forming tubercles below the excavation, which in upper whorls bears short plicae, just below the suture; the lower part of whorls is crossed by very numerous

spiral striae, conspicuous in upper whorls, faint on last one, but stronger towards and on the canal. Aperture elongately-oval, angular above, with a wide canal below; peristome damaged, according to the fine growth-lines, with a very shallow sinus above, then regularly arched; columellar margin concave above, then nearly straight, at last slightly directed to the left, covered with a layer of enamel, which is thin above, stronger below. Interior of aperture smooth.

Alt. 54, lat. 18; apert. alt.  $27^{1}/_{2}$ , lat.  $7^{1}/_{2}$  Mill.

A rather doubtful species, which I thought might still belong to *Surcula*, but Mr. SMITH, who compared it in the British Museum, thinks it may be a *Spergo*, a group described by DALL (Proc. U. S. Nat. Mus. Vol. XVII, 1894, p. 680), with 2 Species (l. c. Pl. 24, fig. 1, 2, Pl. 31, fig. 11); unfortunately the nuclear whorls, which ought to be of a *Sinusigera*-character, with oblique, reticular, curved sculpture is wanting, as well as the soft parts, with or without an operculum. Of the two species described and figured, it resembles more *S. daphnelloides* Dall in shape and sculpture. I have followed Mr. SMITH's advice, though, under these unfavorable circumstances, with considerable doubt.

#### Daphnellopsis n. gen.

Shell elongately-fusiform, with smooth nucleus, aperture elongated, with a strong varix exteriorly, behind the peristome, which, in some measure is double, the internal peristome with a horizontal upper margin, a denticulated outer one, with a wide shallow sinus at the point of junction and an angle at the entrance of the short, slightly upturned canal; columellar margin slightly concave above, with a conspicuous layer of enamel.

Type: D. lamellosa Schepman.

1. Daphnellopsis lamellosa n. sp. Pl. XXX, fig. 10.

Stat. 306. 8° 27' S., 122° 54'.5 E. Savu-sea. 247 M. Sandy mud. 5 Spec.

Shell same characters as genus, whitish. Whorls 6, of which about  $1^{1}/_{2}$  form a convex, smooth, slightly inclining nucleus; post-nuclear whorls convex, separated by a deep suture. Sculpture consisting of numerous, lamellose ribs, 26 in number on last whorl, besides a sharp one behind peristome; these ribs are waved by the intercrossing of spiral lirae, 4 principal and a few intermediate ones on penultimate whorl, more lamellose and prominent near the aperture and at the base and canal of last whorl, where they amount to about 16; true peristome strong, with 6 denticles below upper sinus and another at some distance, at the entrance of canal, the so-called exterior peristome, consists of many layers around upper sinus. Columellar margin with the layer of enamel thin and appressed above, thick and nearly loosened below.

Alt. 9, lat. 3; apert. alt.  $4^{1}/_{2}$ , lat.  $1^{2}/_{5}$  Mill.

Alt. 8, lat. 3: apert. alt.  $3^4/_5$ , lat.  $1^1/_5$  Mill.

First measurements of the largest specimen with nucleus, but no developed inner peristome, second ones of specimen without nucleus, but with the peristome quite complete.

This remarkable species is one of the puzzles of the Siboga-collections. It is impossible to locate it with any certainty in one of the groups of Gastropods; the sinus makes it probable that it is a Pleurotomoid, and in this case, nearest allied to *Daphnella* or *Clathurella*; its very shallow sinus pleads for the alliance with *Daphnella*; only the soft parts could probably give light, but unfortunately they are wanting.

#### Mitromorpha A. Adams.

1. Mitromorpha lirata A. Adams.

A. ADAMS, Ann. Mag. Nat. Hist. Ser. 3, Vol. XV, 1865, p. 322.

Stat. 50. Bay of Badjo, West coast of Flores. Up to 40 M. Mud, sand and shells. I Spec.

Several other specimens belong to several groups of the *Pleurotomidae*, but are too young or bad or both for description; only in few cases I have mentioned them, but in view of the doubtful generic position, I have omitted the majority, which manner is certainly no loss to science.

# APPENDIX.

Here follow a few species, which have been found in tubes or boxes and have been overlooked, partly because they were concealed in the aperture of larger species, partly by their real affinity not having been recognized, when the collection was provisionally arranged in larger and smaller groups; so for instance those now recorded as *Trophon*, which, with their damaged peristomes made the impression of belonging to the *Pleurotomidae*, until a closer examination, brought to light the total absence of the characteristic sinus.

### PART I.

p. 36, after Nº 1 add.:

2. Cyclostrema euchilopteronoides n. sp. Pl. XXX, fig. 11.

Stat. 285. Near South coast of Timor. 34 M. Limit between mud and coral, Lithothamnion. I Spec.

Shell quoit-shaped, strong, light yellowish-white. Whorls 4, rounded, separated by a deep suture; spire scarcely raising above last whorl, first whorl vitreous, nearly smooth, last whorl and a small part of penultimate one, with numerous, raised, spiral striae on a zone at the suture; at the rounded periphery and in the wide umbilicus they are coarser than on the two intermediate zones, where they are extremely fine; they are crossed by growth-lines, stronger towards aperture. Aperture transversely oval, peristome thick, upper margin protracted in a peculiar trigonal wing. Umbilicus wide, pervious, funnel-shaped.

Alt.  $I^{1}/_{2}$ , lat.  $4^{1}/_{2}$ ; apert. alt. (perpendicularly)  $I^{1}/_{2}$ , lat. 2 Mill.

This species, by its winged peristome, reminds *C. euchilopteron* Melv. (Ann. Mag. Nat. Hist. Ser. 7, Vol. XIII, 1903, p. 292, Pl. 20, fig. 7), especially if seen from below, but is quite different by its wanting of keels, other particulars of sculpture, size etc.

## PART IV.

p. 254 (8), to Nº 16, Oliva ispidula Linné, add.:

Stat. 179. Kawa-bay, West coast of Ceram. 36 M. Stony bottom. 1 Spec.

p. 329 (83) to Nº 1, Columbella pardalina Lamarck, add.:

\*N. A. M. Isle of Enkhuizen near Batavia. 1 Spec.

This specimen is nearly entirely white, with only one row of black spots below the suture.

p. 36 of after N 3, add.

4. Trophon' floresianus n. sp. Pl. XXX, fig. 12.

Stat. 45. 7–24 S., 118°15.2 E. Flores-sea. 794 M. Fine grey mud with some radiolariae and diatomes. 1 Spec.

Shell fusiform, thin, white, with moderately long spire and canal. Whorls about 7, nucleus and subsequent whorls croded, remaining 4 whorls convex, angular, separated by a deep suture. Sculpture consisting of axial ribs, rather remote on upper whorls, 10 in number on permitimate whorl, nearly disappearing on last one and numerous, raised striae or growth-lines, crossed by spirals, of which a subsutural one is beaded, as well as those on the angle of keel; above this latter are a few faint spirals and more numerous ones on lower part of whorls, 4 on penultimate, about 20 on last whorl and canal, faintly beaded or crenuliferous at the points of intercrossing. Aperture elongately-oval, with a rather blunt angle above, ending below in a rather narrow canal; peristome broken, columellar margin slightly concave above, straight below and along the canal, with a thin layer of enamel.

Alt.  $18^{1}$ , lat.  $7^{1}$ ; apert. alt. about  $9^{1}/_{2}$ , lat. about  $3^{3}/_{1}$  Mill.

This is one of the *Pleurotoma*-like species, which I should hardly have described, were it not for the considerable depth at which it has been dredged.

5. Trophon? celebensis n. sp. Pl. XXX, fig. 13.

Stat. 212. 5 54.5 S., 129° 19'.2 E. 462 M. Fine grey and green mud. 1 Spec.

Shell fusiform, with conical spire and moderately long canal, greyish (dead?). Whorls o, of which about 3 form a convexly-whorled nucleus, with numerous, axial riblets; post-nuclear whorls convex, strongly keeled at periphery. Sculpture consisting of narrow, oblique, axial ribs, protracted towards the deep suture, 20 in number on last whorl, and rather faint, spiral lirae, 5 in number on penultimate whorl, about 20 on last whorl and canal, with a few intermediate ones; on the points of intercrossing the ribs are elongately beaded; on the uppermost of lirae or keel, they form nearly blunt spines; zone between keel and suture without lirae. Aperture elongately-oval, angular above, ending in a rather narrow canal below, peristome much broken, columella nearly straight, with a conspicuous layer of enamel.

Alt. 16/2, lat. about  $7^{1}_{2}$ ; apert. alt.  $8^{1}/_{2}$ , lat.? (too much broken).

Same observation as for the preceding species; however, this shell, with its protracted top of ribs, might perhaps prove to be a Pleurotomoid, if the soft parts could be consulted.

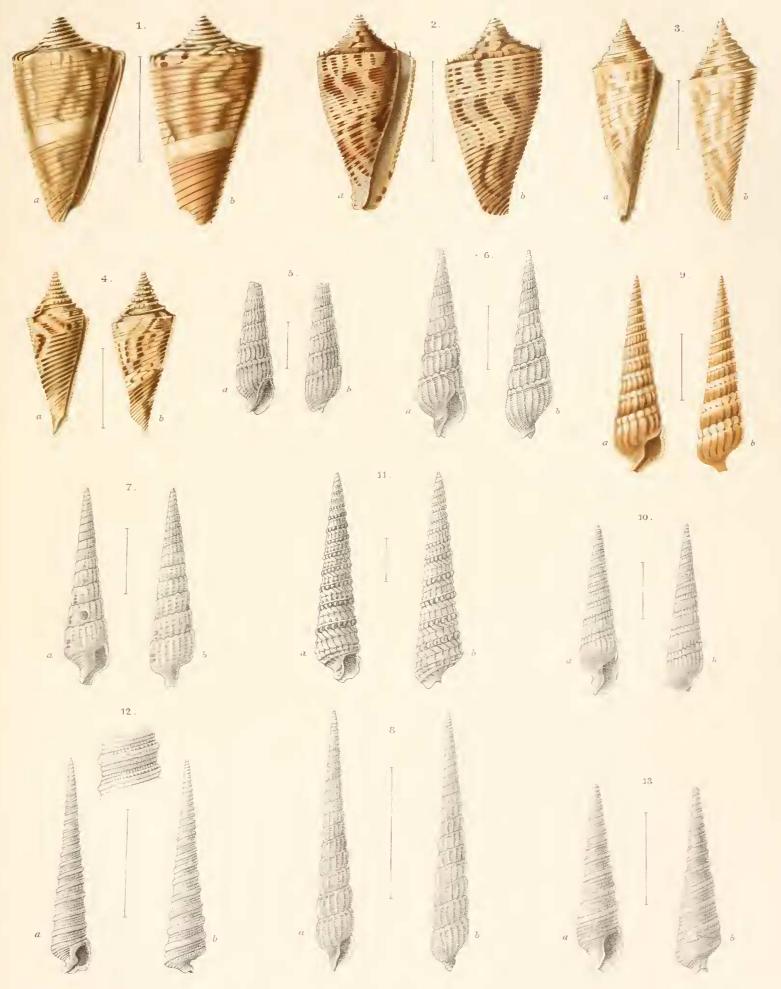
As 1 have omitted to choose types for the two new genera, erected by me in Part 1, 1 now wish to repair that omission, in accordance with the rules of nomenclature. pag. 53, after description of the genus *Solaricllopsis*, add.: type: *Solaricllopsis calcarata* Schepm. pag. 64, after description of the genus *Guttula*, add.: type: *Guttula Sibogae* Schepm.

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# PLATE XXV.

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- Fig. 1. Conus filicinctus n. sp.
- Fig. 2. Conus mucronatus Reeve, var. Sibogae n. var.
- Fig. 3. Conus delicatus n. sp.
- Fig. 4. Conus elegans n. sp. Fig. 5. Terebra exiguoides n. sp.
- Fig. 6. Terebra Macgillurrayi Smith.
- Fig. 7. Terebra turrita Smith.
- Fig. 8. Terebra multistriata n. sp.
- Fig. 9. Terebra undulata Gray var. laccior n. var. Fig. 10. Terebra tiurensis n. sp.
- Fig. 11. Terebra tricincta Smith.
- Fig. 12. Terebra Archimedes Deshayes, c. sculpture more enlarged.
- Fig. 13. Terebra curgo n. sp.



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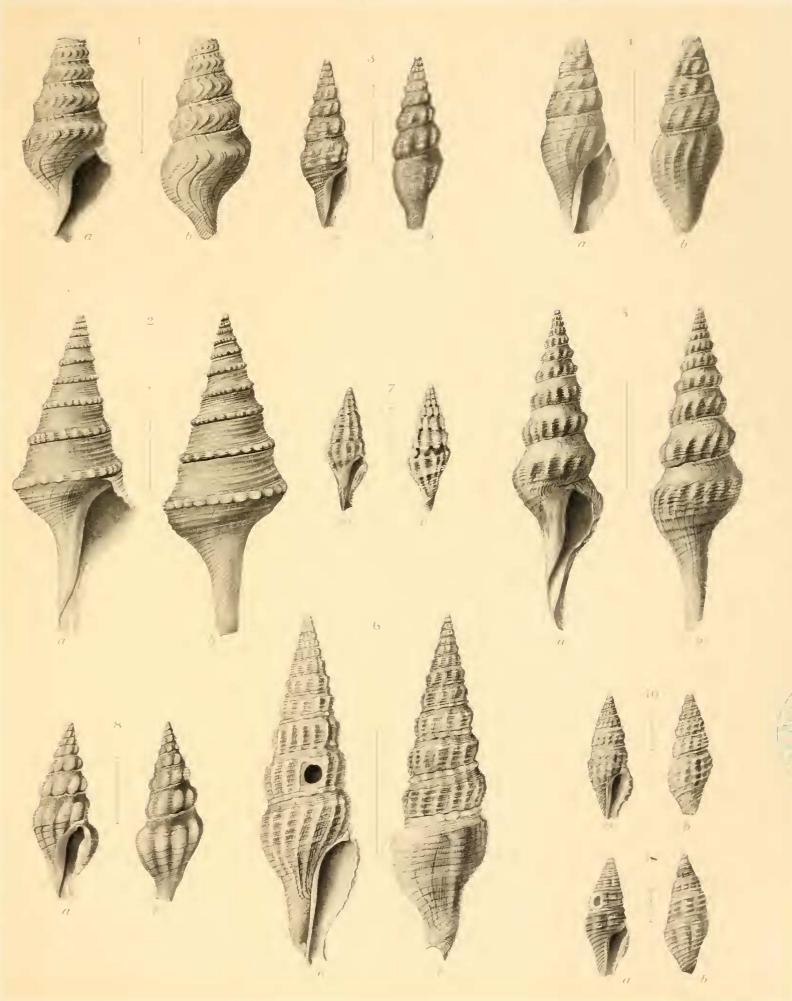
Ch. Dumont del.

Fa. P. W. M. Trap impr.

# PLATE XXVI.

- Fig. 1. Pleurotoma truncata n. sp.
- Fig. 2. Pleurotoma Sibogae n. sp.
- Fig. 3. Drillia snbangnsta n. sp.
- Fig. 4. Drillia rubidofusca n. sp.
  Fig. 5. Drillia pagodaeformis n. sp.
  Fig. 6. Drillia Aesopus n. sp.
- Fig. 7. Drillia rubrozonata n. sp.
- Fig. 8. Drillna rufolineata n. sp.
- Fig. 9. Drillia kwandangensis n. sp.
- Fig. 10. Drillia timorensis n. sp.

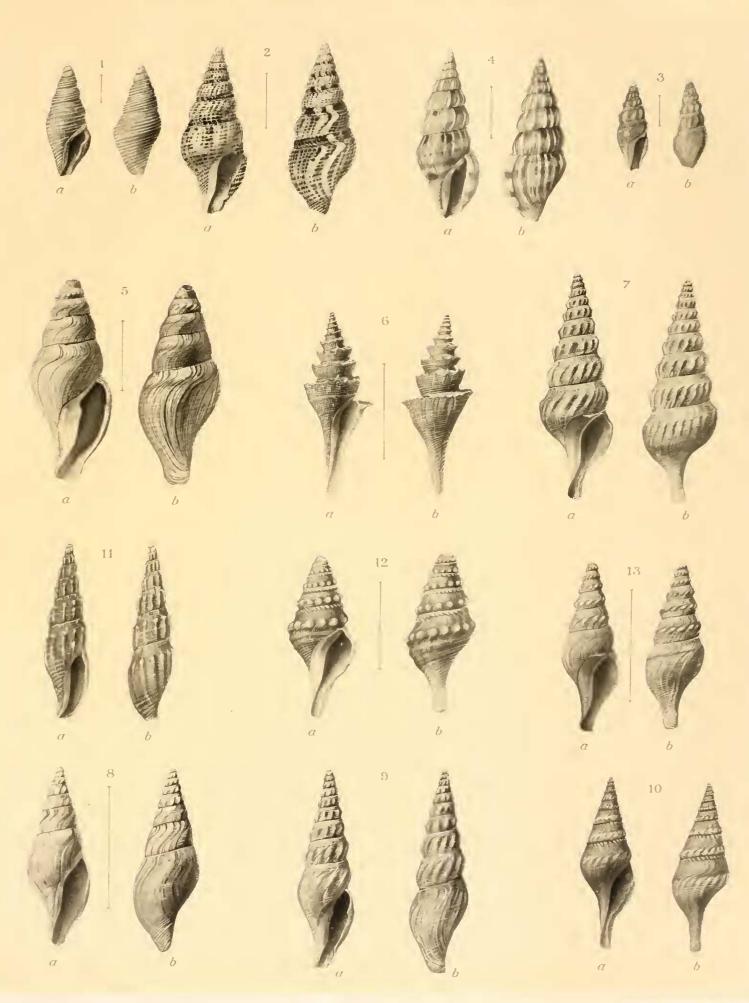
SIBOGA EXPEDITIE. XLIX 1 M.M. SCHEPMAN, PROSOBRANCH A.



# PLATE XXVII.

Fig.	т.	Drillia batjanensis n. sp.
Fig.	2.	Drillia Sibogae n. sp.
Fig.	3.	Drillia suluensis n. sp.
Fig.	4.	Drillia madurensis n. sp.
Fig.	5.	Borsonia Smithi n. sp.
Fig.	6.	Ancistrosyrinx pulchella n. sp.
Fig.	7.	Surcula Melvilli n. sp.
Fig.	8.	Surcula supracostata n. sp.
Fig.	9.	Surcula timorensis n. sp.
Fig.	ΙΟ.	Surcula pyramidalis n. sp.
Fig.		Surcula brachytoma n. sp.
		Surcula obtusigemmata n. sp.
		Surcula undosa n. sp.

SIBOGA - EXPEDITIE , XLIX, 10 M. M. SCHEPMAN, PROSOBRANCHIA.

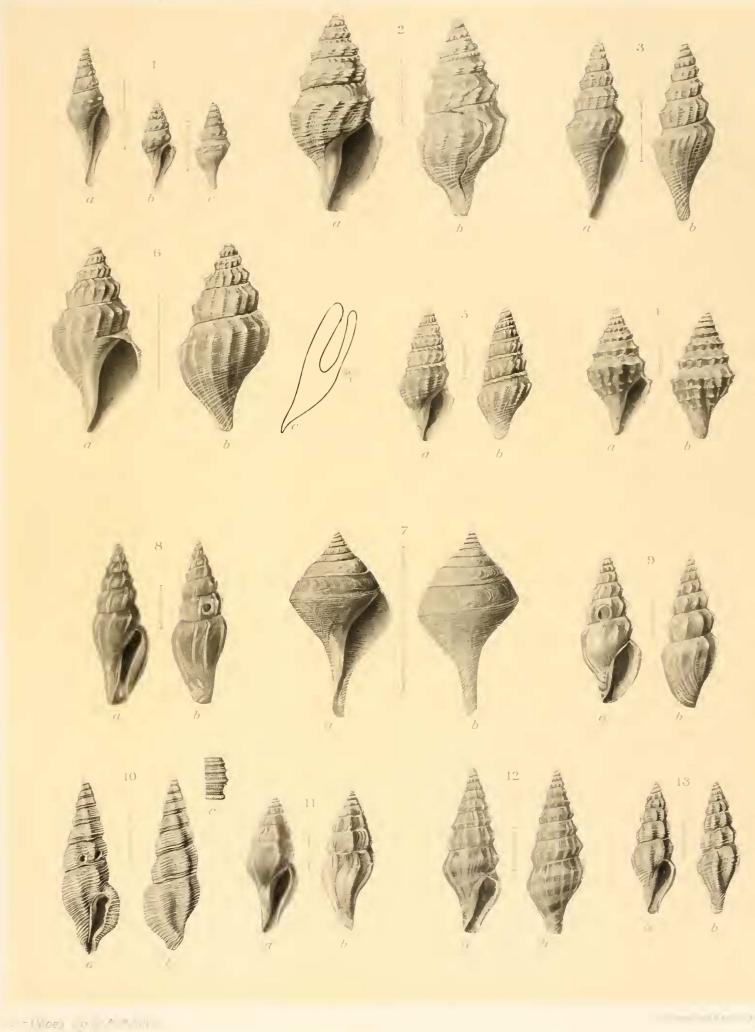


J. F Obbes, del.

# PLATE XXVIII.

- Fig. 1. Surcula variabilis n. sp., a, largest, b, c. smaller specimen.
- Fig. 2. Surcula pulchra n. sp.
- Fig. 3. Surcula trophonoides n. sp.
- Fig. 4. Surcula biconica n. sp.
- Fig. 5. Surcula celebensis n. sp.
- Fig. 6. Surcula Nierstraszi n. sp., c. tooth of radula.
- Fig. 7. Clavosurcula Sibogae n. sp. Fig. 8. Mangilia butonensis n. sp.
- Fig. 9. Mangilia rufostrigata n. sp.
- Fig. 10. Mangilia multigranosa n. sp., c. sculpture, much enlarged.
- Fig. 11. Mangilia septemcostata n. sp.
- Fig. 12. Mangilia multicostata n. sp.
- Fig. 13. Mangilia savuensis n. sp.

SIBOGA - EXPEDITIE . XLIX. 1) M. M. SCHEPMAN, PROSOBRANCHLA.



# PLATE XXIX.

Fig. 1. Mangulia crassicingulata n. sp.

Fig. 2. Mangilia halmaherica n. sp., a. largest, b. smaller specimen.

Fig. 3. Lienardia granulifera n. sp.

Fig. 4. Lienardia peristernioides n. sp.

Fig. 5. Clathurella virgo n. sp.

Fig. 6. Clathurella rufoapicata n. sp., c. apex, much enlarged.

Fig. 7. Daphnella supracancellata n. sp.

Fig. 8. Daphnella elegantissima n. sp.

Fig. 9. Daphnella celebensis n. sp.

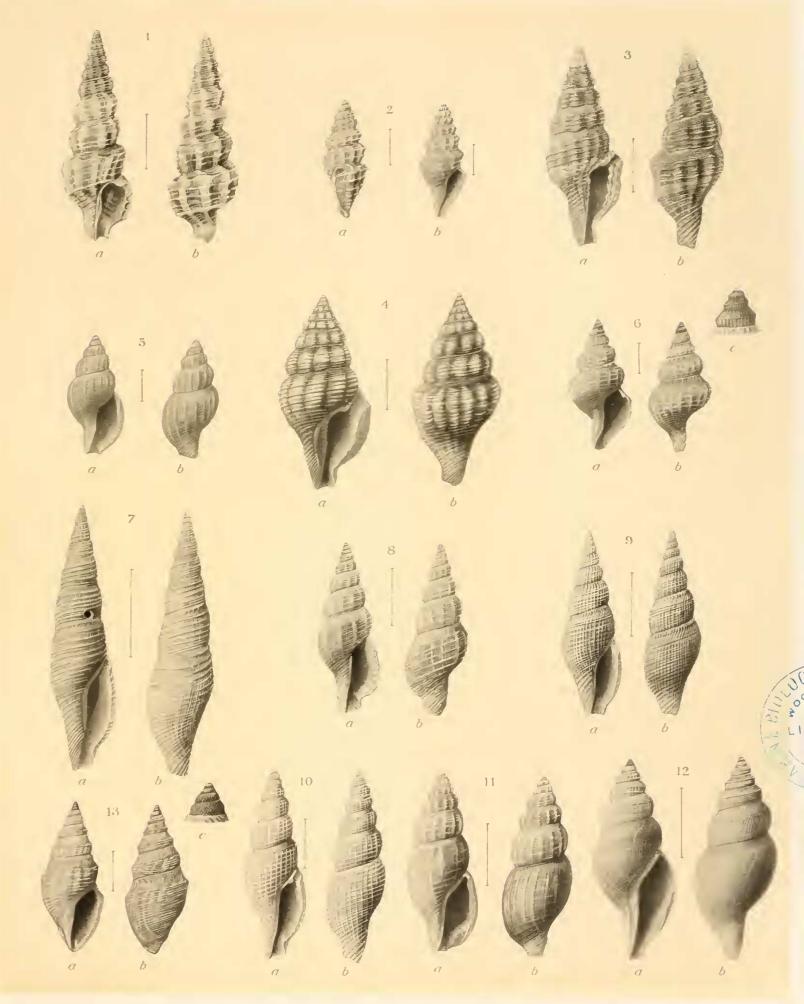
Fig. 10. Daphnella subuloides n. sp.

Fig. 11. Daphnella suluensis n. sp.

Fig. 12. Daphnella perfragilis n. sp.

Fig. 13. Pleurotomella biconica n. sp., c. apex, much enlarged.

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# PLATE XXX.

- Fig. 1. Pleurotomella affinis n. sp., c. apex, much enlarged.
- Fig. 2. Pleurotomella gradata n. sp., c. apex, much enlarged.
- Fig. 3. Pleurotomella ceramensis n. sp., c. apex, much enlarged.
- Fig. 4. Pleurotomella clathurellaeformis n. sp., c. apex, much enlarged.
- Fig. 5. Pleurotomella extensacformis n. sp., e. apex, much enlarged.

Fig. 6. Pleurotomella abbreviata n. sp., c. apex, much enlarged.

Fig. 7. Pleurotomella pyriformis n. sp., c. apex, much enlarged.

Fig. 8. Pleurotomella dubia n. sp., c. apex, much enlarged.

Fig. o. Spergo Subogae n. sp.

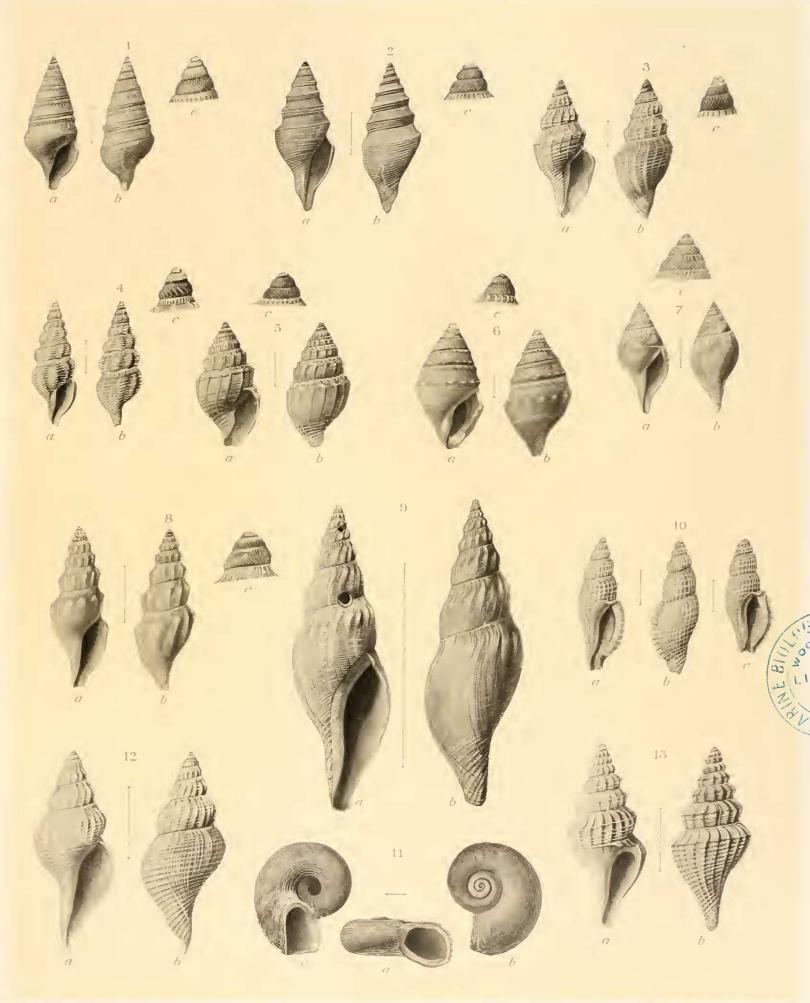
Fig. 10. Daphnellopis lamellosa n. sp., a. b. large specimen, c. smaller one with peristome fully developed.

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- Fig. 11. Cyclostrema euchilopteronoides n. sp.
- Fig. 12. Trophon floresianus n. sp.
- Fig. 13. Trophon celebensis n. sp.

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